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OF
LOWER MANHATTAN

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A PLANNING STUDY OF LOWER MANHATTAN

A Thesis

Presented to

the Faculty of the Planning and Housing Division

of the School of Architecture

Columbia University

In Partial Fulfillment

of the Requirements for the Degree

Master of Science in Planning and Housing

by

Edwin Friedman

May, 1958

Edwin Friedman

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Thesis
U P.

ABSTRACT

A PLANNING STUDY OF LOWER MANHATTAN

Edwin Friedman (under the direction of Professor J. Marshall Miller)

Master's Thesis, June 1958

Columbia University, School of Architecture,
Planning and Housing Division

Thesis and Research Problem: The purpose of this study is to examine in some detail Lower Manhattan, a small but vital segment of the central business district of New York City, and to formulate realistic proposals designed to rehabilitate the downtown area in form and function.

Method of Study: The methodology used in this study consisted of the collection and analysis of a variety of social, economic and physical data on the study area. The formulation of the problem, and a statement as to the limitations of the study are presented in the Introduction. Insight into the developmental factors affecting the area was obtained from an intensive and detailed review of a wide range of historical studies. Prior research on the area during the past decade was reviewed and summarized in order to indicate the magnitude and complexities of the problems involved, and to throw light upon the areas of investigation and the proposed recommendations. The major areas for which data was assembled from a variety of sources include population, housing and economic characteristics; community facilities; land use and intensity of use; functional areas; existing and proposed zoning; economic base activities; residence and employment; retail stores and sales; office buildings and non-residential floor space; recent

post-war construction; assessed valuations; transit and transportation, with particular emphasis upon the needed separation of pedestrian and vehicular traffic; waterfront; and the wholesale produce market. A variety of maps and photographs illustrate past and present conditions. A chronology of the history of the area; a report by the City Planning Commission on proposed housing in the area; and a list of major structures in the area by address, height in feet, number of floors, rentable floor space and date of construction are given in the appendices, followed by an extensive bibliography of most of the works consulted in this study.

Major Findings: The major conclusions derived from this study reveal serious impairment of the healthy functioning of this vital area of the city. The essential problems confronting the area are those of mixed and incompatible land uses; inadequate circulation with a critical conflict between pedestrian and vehicular traffic; blight and the continuing deterioration of much of the area's physical plant; inadequate open spaces and community facilities; excessive bulk and use zoning; a waterfront deteriorating in function and structure; a hodge-podge pattern of unimaginative, unintegrated and small scale redevelopment; a tragic inability to implement prior recommendations made by other studies; and a general atmosphere of inertia that afflicts politician and constituent alike.

Various design and non-design proposals are formulated in this study which are intended to meet the needs of the area, and to impart renewed form and function. The design proposals include a circulation plan, a land use plan and several examples illustrating the redevelopment potential of the area. Non-design proposals are in the area of administration and policy recommedations.

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"The city........is something more than a congeries of individual men and of social conveniences - streets, buildings, electric lights, tramways, and telephones, etc.; something more, also, than a mere constellation of institutions and administrative devices - courts, hospitals, schools, police, and civic functionaries of various sorts. The city is, rather, a state of mind, a body of customs and traditions, and of the organized attitudes and sentiments that adhere in these customs and are transmitted with this tradition. The city is not, in other words, merely a physical mechanism and an artificial construction. It is involved in the vital processes of the people who compose it; it is a product of nature, and particularly of human nature."

Robert E. Park
in The City

ACKNOWLEDGMENTS

While this study has been exhausting at times, it is far from being exhaustive. Nevertheless, acknowledgment is due many people, especially the following: Hugh Pomeroy, Director of Planning, Westchester County Department of Planning and S.J. Schulman, Chief Planner, Westchester County Department of Planning for their kind permission to use data collected by the student while engaged in research for their study on Lower Manhattan; Larry Press, for his indispensable assistance in graphic preparation; Martha La Bianca and Rose Aquino who handled all the secretarial work involved; Al Mercado for his interest and invaluable comments, and his employer, Skidmore, Owings and Merrill for making possible the reproducing of this study; and lastly but primarily, to my wife Edith, whose quiet assumption of additional responsibilities and whose firm but gentle persistence provided both the time and the motivation for this study.

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Introduction

Within the past few decades, increasing attention has been focused on the complex problems of the central business district, predating the current urban renewal interest. Among the pioneering studies are those by Geddes;[1] Park, Burgess and McKenzie;[2] the Regional Plan of New York;[3] and Hoyt.[4]

Of the many definitions and descriptions of the central business district, the one by Dickinson is marked by both clarity and conciseness. "A really distinctive feature of the structure of the metropolitan city is the central business district -- variously named the core, the city, or the downtown district -- in which the centralized services are concentrated. This district is characterized by the great congestion and mixture of its buildings, and by the dominance of shops, offices, warehouses, and public buildings, often grouped separately, as well as by its steady lateral expansion, its small night time population, and by the great daily ebb and flow of workers to and from the surrounding residential districts."[5]

---

[1] Patrick Geddes, Cities in Evolution (1949 rev. ed., London: Williams and Moregate, 1915).

[2] Robert E. Park, Ernest W. Burgess, and Roderick D. McKenzie The City (Chicago: University of Chicago Press, 1925).

[3] Robert M. Haig, Major Economic Factors in Metropolitan Growth and Arrangement (New York: Regional Plan, 1927).

[4] Homer Hoyt, One Hundred Years of Land Values in Chicago (Chicago: University of Chicago Press, 1933).

[5] Robert E. Dickinson, City Region and Regionalism (London: Routledge and Keegan Paul, 1947) p. 327.

The central business district, characterized also by a profusion of mixed and incompatible land uses, a large scale out migration of population, the decentralization of business activity, an inadequate circulation system with resultant costly congestion, blight and the continuing deterioration of physical structures, rising municipal costs, inadequate open spaces, excessive bulk, and a hodge-podge pattern of unimaginative and unintegrated redevelopment that further aggravates the conditions it supposedly seeks to ameliorate, stands today at the veritable crossroads of survival.

As Lawrence M. Orton aptly pointed out before the 1940 conference of the American Society of Planning Officials, the forces contributing to the general and serious problem of the business center are not temporary or superficial phenomena, but instead reach to the very roots of modern existence. The survival of the central business district is justifiable only if it can be grounded on the bedrock of adequate and economical service within the framework of the entire pattern of the city.[6]

The purpose of this study is to examine in some detail Lower Manhattan, a small but vital segment of the central business district of New York City, and to formulate realistic proposals designed to rehabilitate the downtown area in form and function.

Lower Manhattan, as defined in this study, is that area in Manhattan bounded on the south by the Upper Bay, on the west by the North or Hudson

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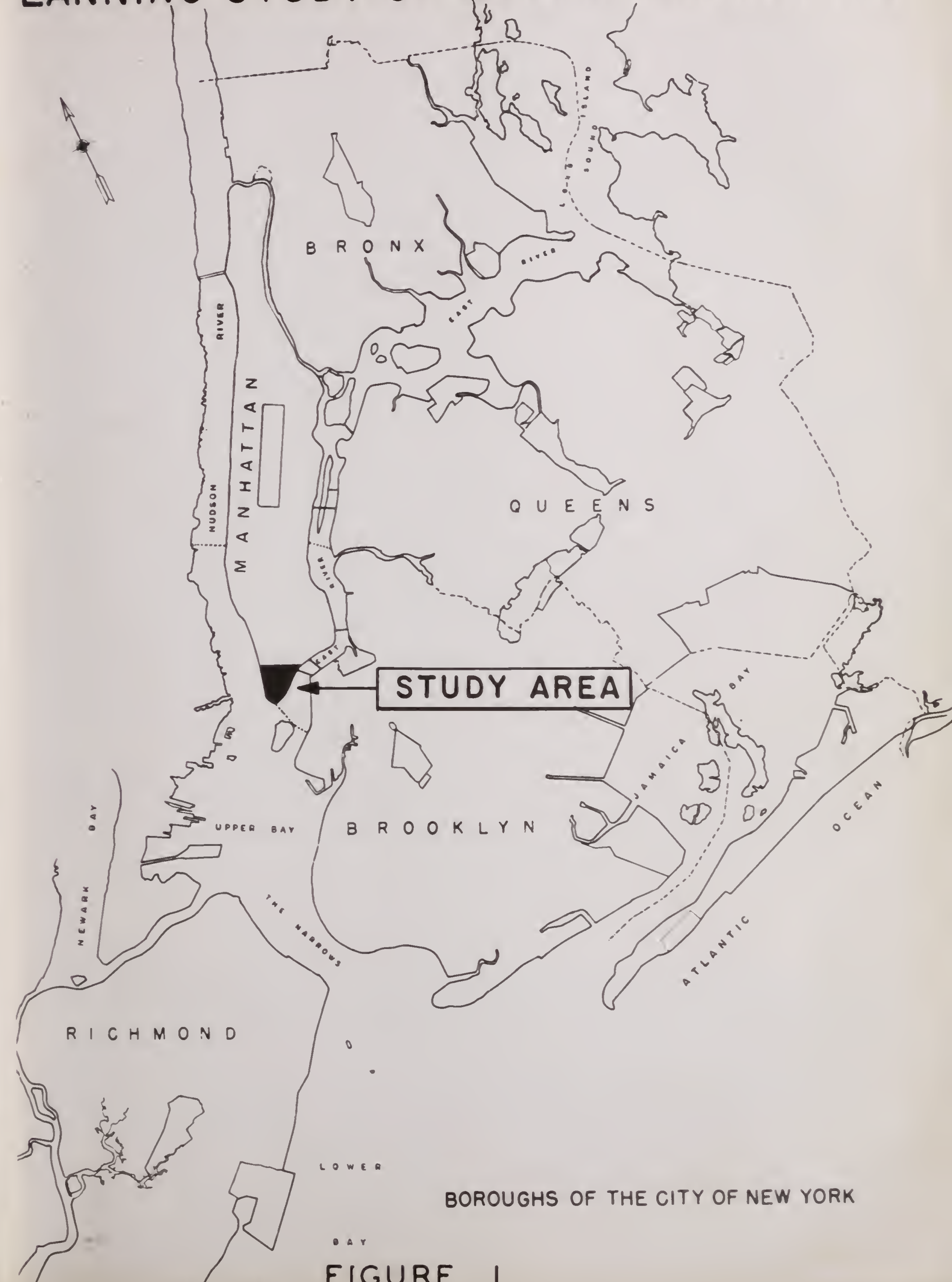
[6] John Fugard, Summary Discussion on What is Happening to Our Central Business Districts Proceedings (Chicago, National Conference on Planning, 1940), 194 pages.

PLANNING STUDY OF LOWER MANHATTAN



BOROUGHS OF THE CITY OF NEW YORK

FIGURE I

River, on the east by the East River, and on the north by Chambers Street. Three sides of the area are therefore absolutely defined by water, while the northern boundary of Chambers Street marks the first major east-west street running from river to river. This definition of Lower Manhattan differs from other studies in its determination of the northern boundary.[7] These studies generally use either Fulton Street or Canal Street as the northern boundary of the area despite the fact that the use of either of these streets complicates a plethora of complex problems and introduces such extraneous factors as slum clearance, textile operations and warehousing - all of which have little relationship to the area south of Chambers Street. The logic of Chambers Street as the northern boundary is further reinforced by the fact that to the north the area changes considerably with loft buildings, warehouses and dilapidated housing beginning to replace the characteristic office building complex to the south. In addition, the civic center grouping around Foley Square acts as a functional transition between the areas north and south of Chambers Street. The study area includes census tracts 7, 9, 11, 13, 15, 17, 19, 21 and 23, and parts of 25 and 31.

The census tract is used as the unit for the collection of land use, population, housing and other data. The value of the census tract as a methodological tool in urban research is stressed by Foley in his discussion of research patterns.[8]

---

[7] Many studies utilize Canal Street as the northern boundary since it is coterminous with the boundaries of the statistical district and census tracts, while other studies regard Fulton Street as the limit of the financial and insurance districts. Some of these studies are dealt with more fully in the section on Prior Studies.

[8] Donald L. Foley, Census Tracts and Urban Research (Rochester: University of Rochester) 16 pages.

PLANNING STUDY OF LOWER MANHATTAN

ARTERIAL SYSTEM

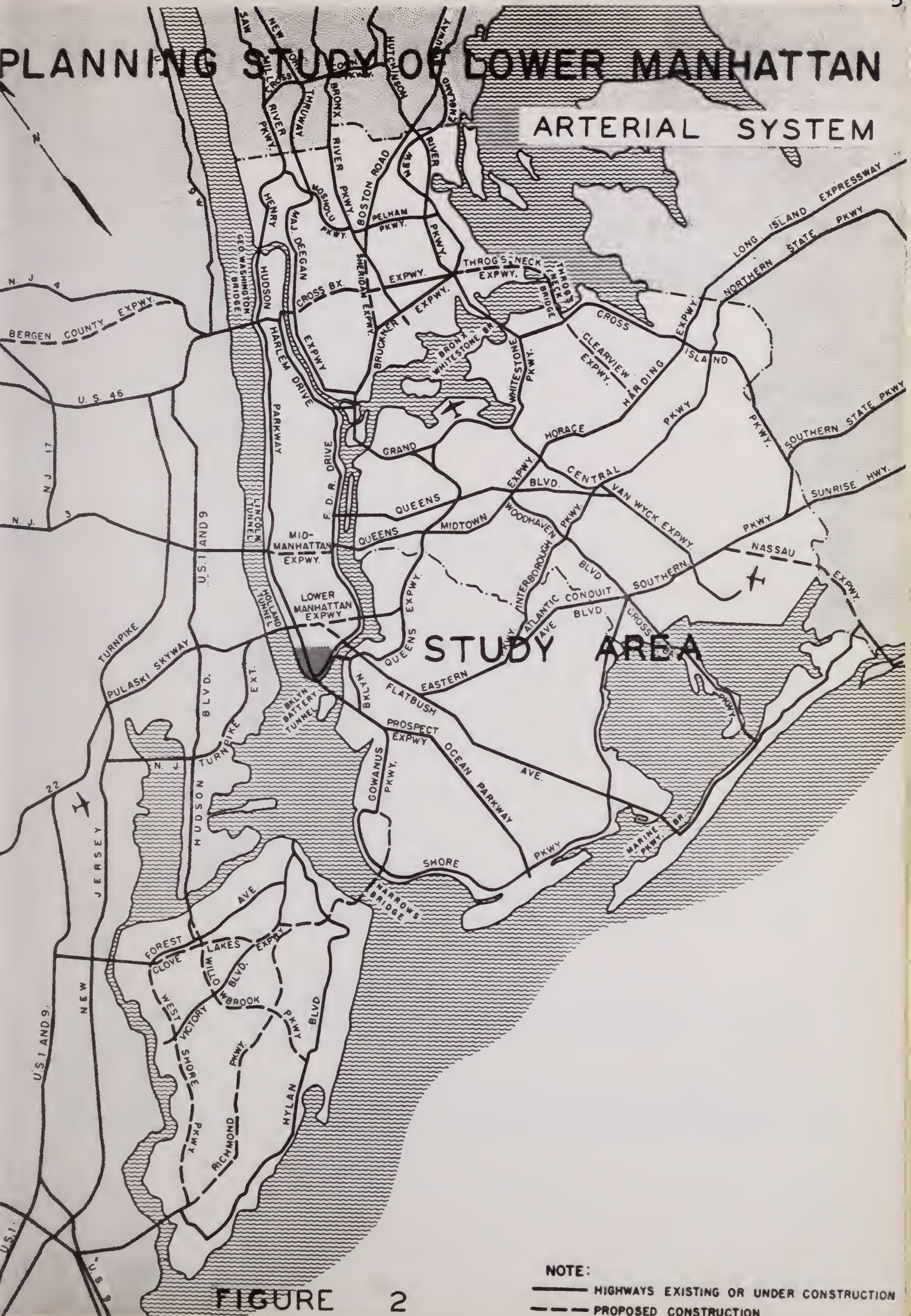


FIGURE 2

The methodological approaches to analysis of the central business district fall within two broad categories, namely the economic base approach and the design approach.[9] "While the design approach is necessarily limited to considerations of future land use, the economic base approach may be applied to analyses of the current composition of the Central Business District as well as to forecasts of its future needs."[10]

The general methodology used in this planning study of Lower Manhattan is essentially a logical combination of the economic and design approaches. A wealth of data on various aspects of the study areas has been assembled and analyzed.

From the conclusions derived from these analyses have come what is hoped are logical and realistic recommendations, both design and non-design. It is obvious that a study as limited in scope as this is, cannot possibly attempt to diagnose and prescribe for all the multitudinous problems that confront the Central Business District. The broad range of these problems covers many of the ills of our cities: transportation and parking, maintenance of property values, transit service, modernization of structures and facilities, redesign of shopping districts, land use and zoning, and principles of planning.[11]

The present study is an attempt to focus attention on some of these problems as they affect Lower Manhattan and to formulate recommendations capable of affectuation that can eliminate or ameliorate obstacles to the health func-

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[9] Shirley F.Weiss, The Central Business District in Transition Research Paper No. 1 (Chapel Hill: Department of City and Regional Planning, University of North Carolina, 1957) p. 7.

[10] Ibid; p. 7.

[11] American Society of Planning Officials, Programs for Central Business District Improvement (Planning Advisory Service Information Report #80; (Chicago: The Society, 1955).

tioning and growth of the area.

Since a detailed plan for the desperately needed renewal of Lower Manhattan can come only after an intensive and detailed study of its myriad complexities, many of the proposals in this report are schematic only, and the occasional vagueness is deliberate. Design proposals based upon some mystical intuitiveness rather than upon the bedrock of research and analysis are as odious as they are futile. "Without diagnosis of all aspects of society by the social scientist and the careful mapping of his data wherever relevant," writes Dickinson, "the planner cannot provide for optimum use of land, the architect cannot build to suit the immediate and long term needs of the people, and principles of planning, taking shape as the law of the land, can neither be worked out, nor put into effect, on a permanently and socially desirable basis."[12]

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[12] Dickinson, Robert E., City Region and Regionalism. (London: Routledge and Keegan Paul, 1947) p. 319.

CHAPTER I

History of Area

"On the morning of September 3, 1609, all that centuries old life changed forever, though no one - not even Henry Hudson and the mixed Dutch and British sailors of the yacht Half Moon - realized that a new world metropolis was being born. The towering buildings that thrust aside the sky, the bustle in the streets, the reek of gasoline, the buses, taxi cabs, motorcars, the subways boring through the granite foundations of Manna-hata or forcing their earthworm way beneath the Hudson's ooze, the rushing about of human ants, intent upon their small affairs, the blazing parti-colored lights of midtown Broadway, the pinnacles of lower Broadway, the stately castles of Fifth Avenue -- all these were implicit in a little two-masted yacht, its bright paint now a little dulled by salt spray, whose clumsy bow and pointed bowsprit poked uneasily into strange waters."[13]

New York in primitive days was a city of hills and flowing streams which early travelers described as having a beauty seldom surpassed in nature.[14] Although the southernmost end of the island of Manhattan was a flat formed of mud, silt and swamp,[15] a tilted ledge of Fordham gneiss lay about 40 feet underground at the now Battery Place, about 75 feet, down at Trinity Church and about 159 feet down at present Worth Street.[16]

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[13] John Bakeless, The Eyes of Discovery (New York: J. B. Lippencott, 1950), p. 235.

[14] Kenneth Dunshee, As You Pass By (New York: Hastings House, 1952), p. 26.

[15] Works Progress Administration, A Maritime History of New York (New York: Doubleday, Doran, 1941) p. 9.

[16] Rodman Gelder, The Battery (Boston: Houghton Mifflin, 1936), p. 4.

The region was favored by relatively mild winters for the latitude, with February, the coldest month, having a mean temperature of 31°; not excessively warm summers, with July the hottest month, having a mean temperature of 74°; an abundance of precipitation with between 42 and 51 inches annually; and a rather high humidity.[17]

Prior to the advent of the white man, this "goodly land of wooded islands and great rivers" was inhabited by Indians of Algonquin stock. About a hundred settlements of 29 local groups abounded in what is now New York City.[18] In 1624, the first permanent settlements of the Dutch West Indies Company replaced the trapper and trading outposts which had functioned from 1614. The only major colonial settlement in the United States established for purely commercial and economic development[19] was under way.

In the beginning, the entire city was perched on the southern tip of Manhattan Island.[20] The first makeshift houses were gradually replaced by brick and stone with shops on the ground level, family living quarters in the rear, and store rooms for furs and merchandise on the upper floors.[21]

On May 6, 1626, Peter Minuit purchased Manhattan Island from the Indians for trinkets valued at $24. The town then had a population of 200.

---

[17] R. L. Duffus, Mastering a Metropolis (New York: Harper and Brothers, 1930), p. 14.

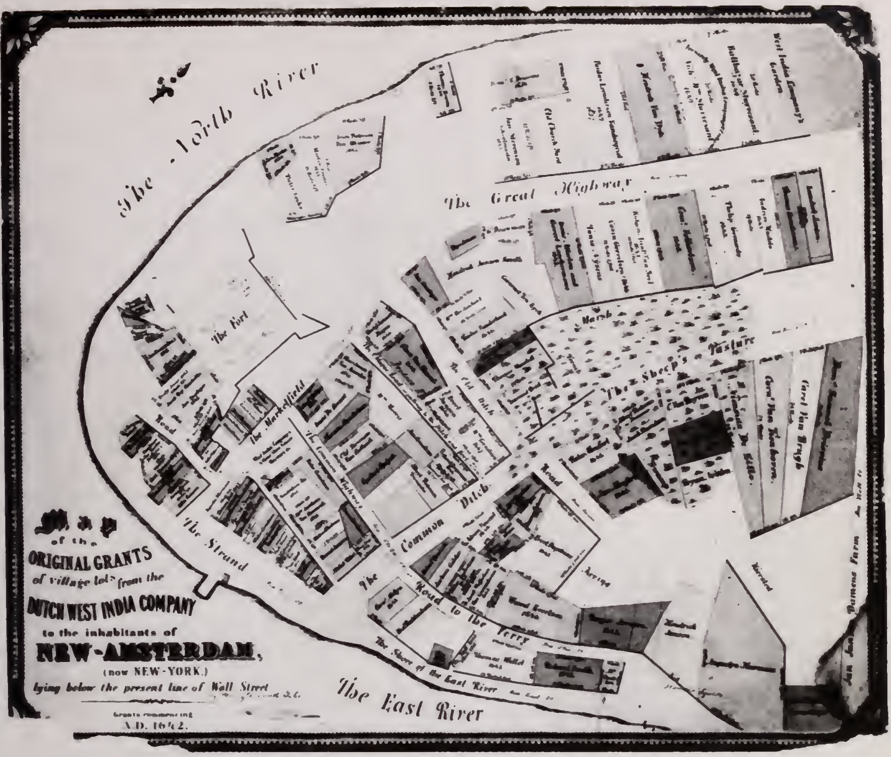
[18] New York City Department of Commerce and Public Events, New York - The City That Belongs to the World (New York: 1956), p. 3.

[19] Dunshee, op. cit., p. 9.

[20] Hart Smith, The New Yorkers (New York: Sheridan House, 1938), p. 11.

[21] R.W.G. Vail, "Growth of the City," Renascence of City Hall ed. by Ernst Neufeld (New York: Department of Public Works, 1956), p. 75.

PACE COLLEGE ARCHIVES



Above, original grants by the Dutch West India Company, commencing 1642.

①

FIGURE 3

In 1626, Fort Amsterdam was laid out, in 1628, the first church was built and in 1633 the first school opened. A ferry to "Longe Eyelandt" was established in 1638, and in 1642, the first public meeting-place or tavern was built at 73 Pearl Street. A small open wharf was built into the East River in 1648, Manhattan was incorporated in 1652 and given a charter, and the protective "waal" was erected along Wall Street. "Thus, within the first thirty years -- 1625 to 1655 -- New Amsterdam became a compact and growing settlement of about 1,000 persons," living in homes with yards and vegetable patches in the area between the Fort and the "waal."[22]

In 1657, the first street was paved[23] and in 1658, the first hospital was founded.[24] In 1660, a privately owned and operated post office was begun.[25]

In 1664, the city was captured by the English and renamed New York after James, Duke of York. In 1673, the Dutch recaptured the city and renamed it New Orange after the Prince of Orange. A year later, all of New Netherland, including the city, was ceded to the English[26] and the Dutch concluded what may have seemed to them an eminently satisfactory transaction by acquiring Dutch Guinea in exchange.

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[22] New York City Department of Commerce and Public Events, op. cit., p. 8.

[23] Official Directory of the City of New York (New York, The City Record, 1956), p. 1.

[24] New York City Department of Commerce and Public Events, op. cit., p. 9.

[25] Official Directory of the City of New York, op. cit., p. 3.

[26] Ibid., p. 4.

The city grew steadily and physical improvements kept pace with population growth, which reached about 3,000 persons by 1675[27] and around 4,000 by 1695 when approximately 500 houses were in existence. Numerous orchards, meadows and pastures were within the city limits, while duck hunting was available in Beekman's Swamp and the Collect Pond was noted for the excellence of its fishing.[28]

The "Great Dock" was constructed in 1676 from about Water Street, stretching in two arms from Whitehall Street, to Coenties Slip. Until 1750, this facility served as the only place of dockage.[29] In 1699, John Hutchins and others were granted the waterfront to their land between present Cortlandt and Cedar Streets with the agreed upon stipulation that they build a wharf.[30] These two events marked the beginning of waterfront development. "From this humble beginning can the city's tremendous expansion (be traced) to the growth and dominance of the Port; that lying between ship docks....the city's development was the natural corollary of its growth as a maritime center."[31]

As early as 1660 when Jacques Cortelyou was directed to prepare a survey and plan of the city, the authorities found it difficult to obtain housing sites for the population influx. "Many large lots were not built

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[27] Department of Public Works, op. cit., p.

[28] Hart Smith, op. cit., p. 12.

[29] Work Progress Administration, op. cit., p. 68.

[30] Ibid.,

[31] Ibid., p. XV.

upon but were used as gardens or orchards while owners waited for land values to rise."[32]

1693 marked the construction of the first bridge across the Harlem River to the mainland, the erection of the first Battery, and the establishment of the first printing press.[33]

From 1695 to 1755 when it reached over 16,200, the population of the city slightly more than quadrupled.[34] During this period of growth, the "waal" was torn down as the city expanded past it, a new City Hall was erected, the oldest Jewish synagogue in America was founded, Bowling Green was established as a privately managed park, the new Bellevue Hospital was founded, a volunteer fire department began operating, and two institutions were organized - the first city library and Kings College.[35]

As the town moved northward, rocky hills were leveled and the fill was dumped into the rivers and the bay to form new thoroughfares and the Battery. By 1731, the canals had been filled in and the city was pushing north of the present Canal Street.[36]

Six public markets, a customs house, wharves, docks, and five shipyards along the East River were all indicative of the bustling commerce of the thriving seaport.[37] The City lived almost wholly by trade with the

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[32] John A. Kouwenhoven, The Columbia Historical Portrait of New York (New York: Doubleday and Co., 1953), p. 40.

[33] New York City Department of Commerce and Public Events, op. cit., p. 10.

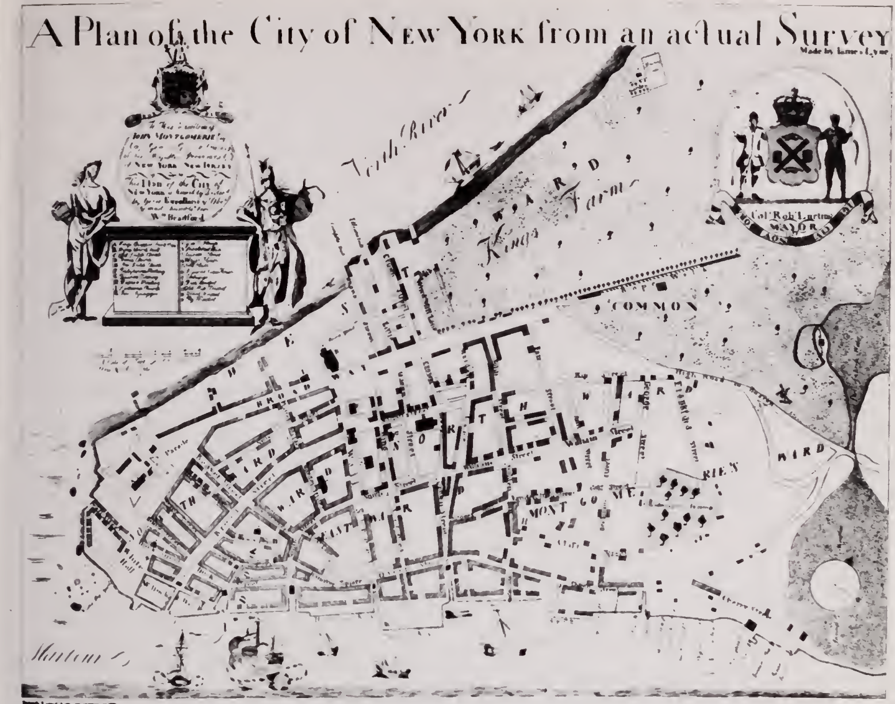
[34] Ibid., p. 13

[35] Ibid., p. 12-13.

[36] Vail, op. cit., p. 53

[37] Ibid., p. 76

PACE COLLEGE ARCHIVES



FACSIMILE of an original map made 1728. Reprinted by Joseph Laing Litho No. 25 Fulton Street, New York.

a plan for the City, 1728. "The Common Ditch" has become Broad Street. Note Rope Walk, upper right, where rope was manufactured in a long, narrow building.

FIGURE 4

West Indies and with Great Britain.[38] From 1717 to 1720, an average of about 225 vessels cleared port every year. From 1747 to 1762, ships owned by New Yorkers increased from 99 to 447, and the number of sailors employed rose from 755 to 3,552.[39]

While New York's growth between 1660 and 1760 is regarded as "extremely slow" by some authorities[40] and the "Manhattan settlement lagged behind Boston and Philadelphia and was dealt a severe blow by the Revolutionary War" during which one-fourth the cith was destroyed,[41] by 1800 New York was undisputedly the leading American seaport,[42] a position she has not relinquished to this day.

New streets were laid out in 1771, as the town advanced steadily east and north.[43]

Iron casting had its start in 1767, when an air furnace was built near Greenwich and present Franklin Street.[44] John Street in 1768 was described as a "quiet middle class neighbornood inhabited by painters, chairmakers, grocers, bookbinders and the like."[45] Two decades were to pass before the first successful fire insurance company, the Mutual Assurance

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[38] Kouwenhoven, op. cit., p. 53.

[39] Ibid., p. 55-60.

[40] T.T. McCroskey, Charles Blessing, J. Ross McKeever, Surging Cities (Boston, Greater Boston Development Committee, 1948), p. 40.

[41] Duffus, op. cit., p. 15.

[42] T.T. McCroskey, op. cit., p. 43.

[43] Vail, op. cit., p. 71.

[44] Kouwenhoven, op. cit., p. 100.

[45] Ibid. p. 63.

Company, was to locate in what is now the insurance heart of the city.[46] The Tontine Coffee House built in 1792 at the northwest corner of Wall and Water Streets housed the Stock Exchange and the principal insurance offices.

By 1793, Wall Street's heyday as a residential thoroughfare was over.[47] Once a place of fine residences and shaded gardens, it had become the most important business street of the nation.[48]

By 1797, business was encroaching on the residential uses, and the inexorable uptown march of shops on Broadway had begun.[49] "At century's end, only institutions and a few very rich men's estates stood out from the solid anonymous blocks of houses and shops crowding along both shores and up the main thoroughfares in the center of the wharf-fringed island."[50]

According to Bridenbaugh, New York during the eighteenth century was characterized by "an astonishing expansion of all the activities of urban existence and....the triumph of the age of enlightenment."[51]

In the middle of the 17th century the principal business street

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[46] Ibid., p. 150

[47] Arthur Pound, The Golden Earth (New York, Macmillan, 1935), p. 99.

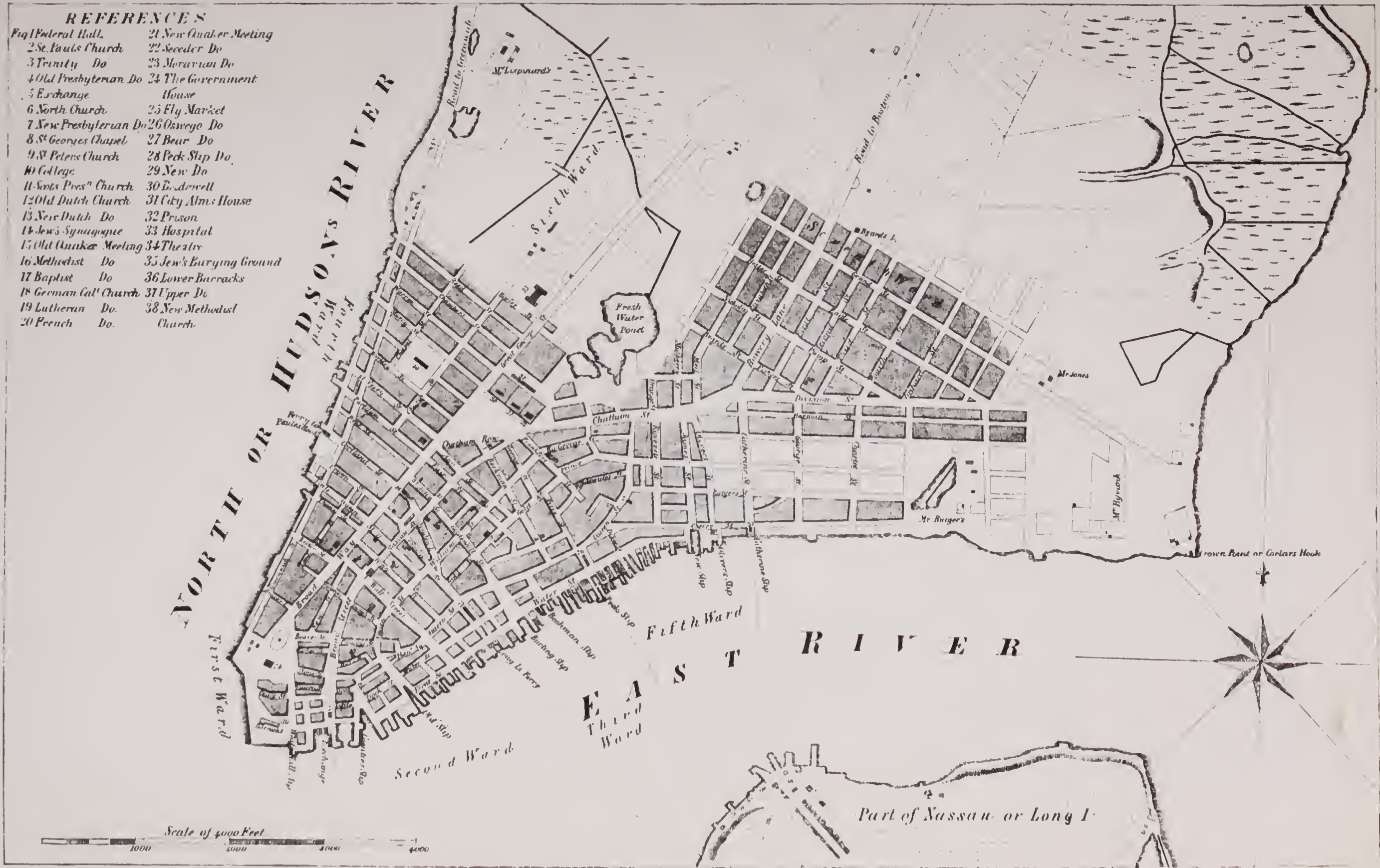
[48] Manna-hatin (New York: The Manhattan Company, 1929), p. 107.

[49] Vail, op. cit., p. 77.

[50] Kouwenhoven, op. cit., p. 104.

[51] Carl Bridenbaugh, Cities in Revolt: Urban Life in America, 1743 - 1776 (New York: Knopf, 1955)

PLAN OF THE CITY OF NEW YORK



From the Original Copy published 1789

had been Pearl, south of Coenties Slip,[52] with a northward shift by about 1820 centering the city's commercial life around South Street and Maiden Lane. Around 1800, the city reached out to about Grand Street,[53] so that this date marks the divergence of the history of the city from the history of the area.

In 1807, the country was considered to start at Chambers Street, so that for purposes of economy the rear of the new City Hall was faced in brownstone while the front was marble and limestone.[54] Even within the city limits buildings were widely scattered and only Wall, Broad and Pearl Streets were solidly built up.[55] Chambers Street marked the location of a reservoir of the Manhattan Company, formed in 1799 to provide "pure and wholesome water."[56]

As previously indicated, by 1800, New York was the leading seaport in the Western Hemisphere. From 1800 to 1860 there was an amazing growth due largely to an ideal location which permitted the tapping of the rich resources of the interior by way of the Hudson River, Erie Canal and the Great Lakes, and later by a network of railroad routes.[57]

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[52] Vail, op. cit., p. 75.

[53] Duffus, op. cit., p. 27.

[54] Manna-hatin, op. cit., p. 133.

[55] Smith, op. cit., p. 11

[56] Manna-hatin, op. cit., p. 129.

[57] McCroskey, op. cit., p. 43.

As the city expanded, so did commercial activity in the study area. Sometime around 1824, the first lithographic press was set up at 7 Murray Street; a year later under the stimulus of the Erie Canal and the continuing growth of imports, some 500 new mercantile businesses were established in the city.[58] It was chiefly along South Street that the city's commercial life centered.[59]

In 1811, the Commissioner's Plan laid out the city to 155th Street and from river to river. Recognizing the dominance of the port function, assuming that most circulation would be from east to west and vice-versa, and concluding that rectangular lots provided for the most economical structures, the Commissioners superimposed the gridiron pattern upon the topography of the island of Manhattan. Time has proved them eminently correct only in their awareness of the importance of the port. In the study area however, the street pattern remained almost unchanged from Dutch days. New Street, between Broadway and Broad Street, was widened from 25' to 35' in 1835 by demolishing buildings along the west side.[60]

In that same year a disastrous fire broke out at Merchant (present Hanover) and Pearl Streets. Over 700 buildings were destroyed, and damages of 17 million dollars incurred. Improved building laws and the Croton water system (completed in 1842) were direct results of the disaster.[61]

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[58] Kouwenhoven, op. cit., p. 129-130.

[59] Ibid., p. 131.

[60] Dunshee, op. cit., p. 56.

[61] Manna-hatin, op. cit., p.148.

Hanover Square, one of the principal business centers of the city, was destroyed by the fire and never regained its former prominence.[62]

Port activity continued to grow. By 1833, New York was the leading shipbuilding center in the United States despite stiff competition from Boston and Bath, Maine. In that year alone the East River yards turned out 76 vessels including ships, barks, brigs, schooners and steamboats.[63] In 1843, a total of 1,808 vessels carrying 45,961 passengers entered the port, while only 5 years later these figures had risen to 3,010 and 176,761 respectively.[64]

In 1848, the first cast iron building was erected at the northwest corner of Washington and Murray Streets.[65] Two years later the parent of the elevator, a vertical screw railway for raising freight from floor to floor, was installed at 201 Cherry Street, just outside the study area.[66] These two technological advances heralded the upward thrust of the Manhattan skyline. Around this time Pearl Street was the center of the importing and jobbing dry goods business, with firms expanding into William, Pine, Cedar, Liberty and other streets.[67]

The old brick buildings on Liberty Street were replaced in 1852 by structures faced with white marble, while a year later the homes and

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[62] Dunshee, op. cit., p. 51.

[63] Kouwenhoven, op. cit., p. 200.

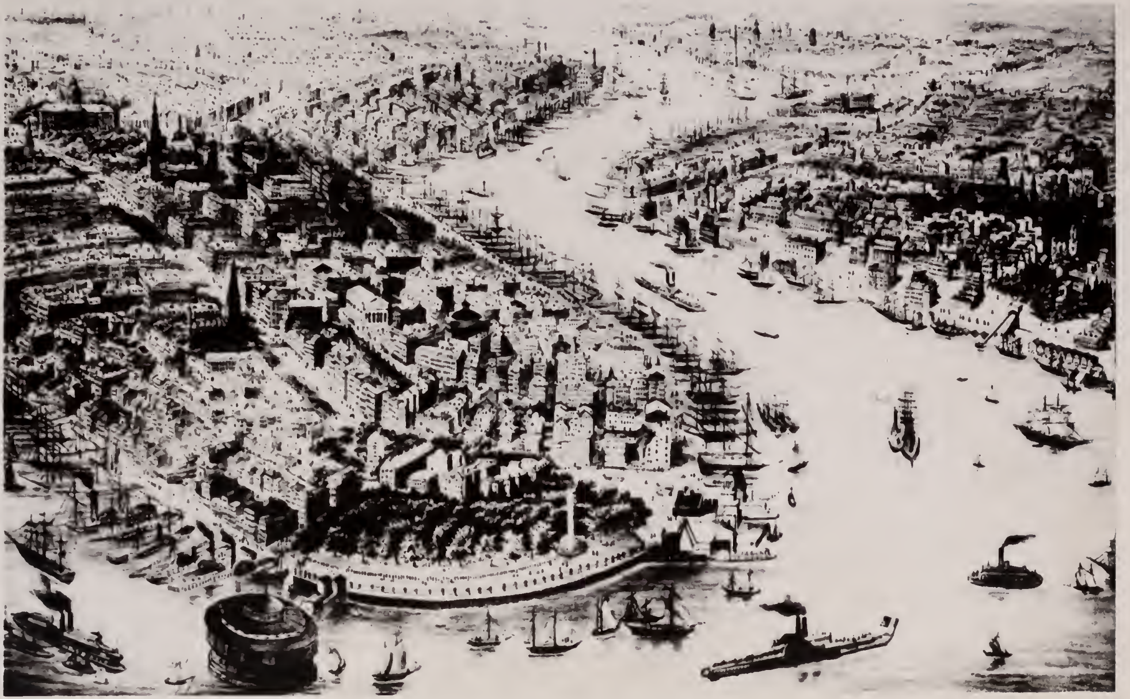
[64] Ibid., p. 203.

[65] Ibid., p. 244.

[66] Manna-hatin, op. cit., p.155.

[67] Ibid., p. 233.

EDWARD W. C. ARNOLD COLLECTION, METROPOLITAN MUSEUM OF ART.
PHOTO. MUSEUM OF THE CITY OF NEW YORK



View of New York, lithograph of about 1852, published in Germany.

boarding houses on Dey Street gave way to commercial establishments for dry-goods dealers.[68]

Between 1816 and 1820, occured the initial surges of the flood tide of immigration. The population swelled, and by 1865 densities in the study area were so high that one observer noted that "the living have but little more of the earths' surface than the minimum allotted to the dead."[69]

The pressures for commercial space resulted in a continuing conversion from residential uses.[70] Tumbledown "tenant houses" competed for space with tanneries in the muck of Beekman's Swamp where Jacob, Rose and Vanderwater Streets ran. So blighted was this area that it was characterized as a "quagmire" and called "the courtyard of the palace of death."[71]

By 1855, the city had expanded as far north as 42nd Street. The Civil War gave a tremendous impetus to the growth of the port, which in 1860 had accounted for over 50% of the nation's exports and 70% of its imports.[72] The vast bulk of this activity was centered in the study area.

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[68] Ibid., p. 247

[69] Smith, op. cit., quotes Edward Crapsey in Nether Side of New York

[70] Smith, op. cit.,

[71] Ibid., p. 13.

[72] Department of Commerce and Public Events, op. cit., p. 28.

After almost two centuries of public use, City Hall Park was legally established as a public park in 1871.[73]

In 1870, the first of New York's four elevated lines, the Ninth Avenue Line, was opened. The Sixth Avenue El running from Rector Street to Central Park, and the Third Avenue El running from South Ferry to 42nd Street were opened in 1878. The advent of the transit lines made Lower Manhattan more and more accessible and the framework of the rapid transit lines has determined the spreading of population to a greater extent than in any other city.[74] Large segments of business activity continued to spread further and further uptown as a result of the improved transit facilities.[75]

The first telephone exchange opened in 1878 with 271 subscribers, while commercial electricity was first made possible in 1881 with the erection of Edison's giant dynamo at 257 Pearl Street.[76]

After 13 years of construction,the Brooklyn Bridge was completed in May, 1883, linking Brooklyn with Lower Manhattan.

About 1880, high speed elevators were perfected. While the "towering skyscrapers which make up the glittering skyline of Manhattan the most awe inspiring spectacle of the many works of man were not existent in the 1880's"[77], high speed electric elevators and the use of steel super-

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[73] Neufeld, ed., op. cit., p. 31.

[74] McCroskey, op. cit., p. 44.

[75] Kouwenhouven, op. cit., p. 407.

[76] Department of Commerce and Public Events, op. cit., p. 30.

[77] Smith, op. cit., p. 177.

structures in buildings gave rise to skyscrapers in the following decades. The 1890 skyline of Lower Manhattan was dominated by the square red tower of the Produce Exchange (which fell before the wrecking bar in 1957), the blackened spires of St. Paul's and Trinity, the pointed Tribune Tower, the golden dome of the Pulitzer Building and the towers of Brooklyn Bridge.[78] "The metropolis was almost literally exploding, upward as well as outward, and by the mid-nineties Manhattan's skyline was becoming the most dramatic visual symbol of the city's commercial and industrial dominance."[79]

In 1898, Greater New York was formed, and the little settlement founded in 1624 was on its way toward becoming the first city of the world.

Event followed major event with awesome rapidity in the study area. In 1900, the complex subway system of today was begun at City Hall, and the first subway made its initial run four years later.[80] The first subway tunnel linking lower Manhattan and Brooklyn was opened in 1908, as were the Hudson and Manhattan Tubes linking Manhattan and New Jersey. In 1920, ground was broken for the Holland Tunnel, and in 1929, construction was begun on the Miller Highway running north along the Hudson River from Rector Street to 72nd Street.[81]

The 792-foot high Woolworth Building was erected in 1913, and

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[78] Manna-hatin, op. cit., p. 184.

[79] Kouwenhoven, op. cit., p. 394-396.

[80] Department of Commerce, op. cit., p. 35.

[81] Ibid., p. 31.

between 1920 and 1935 over 25 other skyscrapers ranging in height from 500 to 1,250 feet were constructed in the area. The East River Drive, started in 1935 and completed a decade later, runs from the Battery north to 125th Street. The recent reconstruction of Battery Park, the modernization of Brooklyn Bridge and City Hall, the recent completion of the Brooklyn-Battery Tunnel and the Ferry Terminal, the proposed widening of Pearl and Water Streets, the continuing volume of new office construction, the proposed rehabilitation of the Miller Highway -- all of these attest not only to the importance of the study area, but also to its vitality.

Despite the presence of such vitality in parts of the area, serious problems nevertheless exist that serious jeopardize the effective functioning of the whole. These problems, dealt with more fully in subsequent chapters, "require new ideas and new techniques in city planning and modernization"[82] if the study area is to flourish.

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[82] Neufeld, op. cit., p. 45.

CHAPTER II

Prior Studies

While the history of the area is significant in developing an understanding of broad developmental factors, insight into specific aspects of current problems can be obtained only through familiarization with recent studies.

Fortunately, the study area or important elements of it has been the subject of numerous studies during the past decade.

In 1945, The Port of New York Authority conducted an investigation of critically congested areas in New York.[83] Lower Manhattan was included as meeting the five characteristics of the exceptionally congested area:

1. Extreme concentration and slow and difficult maneuvering of motor vehicles on the streets, particularly in peak hours;

2. Police restrictions or limitations on parking, particularly in rush hours,

3. Concentration of tall buildings which house large number of people and are generators of heavy movements of goods, thus attracting passenger cars and trucks in large numbers;

4. Extreme concentration of pedestrians on the streets and crosswalks which conflict with vehicular traffic movements and intensify congestion,

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[83] The Port of New York Authority, Studies of Exceptionally Congested Areas in the City of New York (New York: October 1945) 36 pages.

slow speed, and accidents; and

5. Concentration of transit facilities (subways, surface and railroads) which discharge large numbers of people into these areas.[84]

Through a series of maps showing such factors as speed tests, traffic flow, building height, daytime population, parking restrictions by street, and average daily rapid transit passengers by station, the limits of the congested area were precisely defined and the degree of congestion quantified to some extent. No recommendations were made in this study.

A second study by the Port of New York Authority, in dealing with problems of the municipally owned waterfront, made specific findings and recommendations affecting the study area.[85] In stressing the importance of the port to the economic well-being of the city and the region, the report nevertheless recognized that waterfront activities and facilities contributed largely to problems of street congestion and to raising the costs of doing business in the port. The major recommendations were for the unification of railroad piers, the construction of a union produce terminal, and an intensive program of pier reconstruction, rehabilitation and removal of obsolete facilities.

The Port Authority proposed a twelve year program costing an estimated $114,000,000 to carry out its proposals. Under the terms of a fifty year lease, an annual rental would be paid the city.

As part of its studies for a post-war works program, the City Planning Commission in 1942 noted the need for improvements in certain areas where

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[84] Ibid., page 1.

[85] Port of N.Y. - Proposal for Development of the Municipally Owned Waterfront and Piers of New York City (New York: February 1948) 119 pages.

special opportunities existed for general replanning, among them being the Manhattan Civic Center and adjacent areas.[86] Deferred because of the war, the study of this section was completed and released in 1948 and is currently being implemented. The proposals for the redevelopment and extension of the Civic Center affect the study area significantly in major improvements in the street system, in establishing a major functionally integrated area separating the areas north and south, and in serving as an incentive for private enterprise to participate in the renewal and redevelopment efforts.

A restudy by the Port Authority[87] of their waterfront proposals resulted in a recommendation that the combined produce market and railroad carfloat station be deferred as a result of changes in railroad policy with respect to an assessment of extra unloading charges. Other physical plans projected in the report of February 1948 were determined, upon review, to be adequate "to care for the future commerce of the Port of New York, to solve the problem of waterfront traffic congestion, to reduce the expense of shipping operations, to ameliorate the serious fire hazard, and to provide and assure the continued maintenance through the next fifty years of a modern and efficient port."[88]

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[86] City of New York: A Plan for Manhattan Civic Center and Related Improvements (New York: 1948) 29 pages.

[87] Port of New York Authority, Restudy of Proposal for Development of the Municipally Owned Waterfront and Piers of New York City, (New York: April 1949) 35 pages.

[88] *Ibid.*, p. i-ii.

Estimated cost was reduced to $89,000,000 and the time period to 8 years with the proposed deferment of the union produce terminal and adjoining carfloat station.

Concerned with the apparent lack of any endeavor in meeting the problems of the downtown area, James Felt proposed a redevelopment study of the area south of Fulton Street,[89] to be undertaken primarily by interests located in the area. Analyzing the competitive position of the area with respect to midtown Manhattan, the improvements of connecting transit facilities with railway commutation systems; the development of terminal garages possibly using grade areas for parks, shipping or recreation; the redevelopment of the street pattern; planning exhibits of various kinds; and cooperation with governmental and planning bodies, were indicated as necessary areas of research.

A major study was undertaken in 1948 by Harrison, Ballard and Allen in connection with providing the basis for a general revision of New York City Zoning Resolution.[90] The recommendations promulgated by the consultants to the City Planning Commission were based upon a methodical and objective analysis of a great wealth of data, statistics and forecasts.

Because of the extraordinary range of development found in New York City 38 basic zones were proposed - 13 residential, 16 commercial, and 9 manufacturing. Although not adopted, the Plan for Rezoning made significant contri-

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[89] James Felt & Co. and Voorhees, Walker, Foley & Smith, Recommendation for a Redevelopment Study of Lower Manhattan South of Fulton Street (New York: 1950) 14 pages.

[90] Harrison, Ballard and Allen, Plan for Rezoning the City of New York (New York: 1950) 290 pages.

butions in arousing public interest and concern about the inadequacy of the 1916 ordinance, and in introducing a number of major concepts and techniques which have been adopted by other large municipalities. Included in these concepts and techniques were such now common tools as the use group, the angle of light and the area of light access, the floor area ratio, usable open space, and the prohibition on residence in industrial zone, etc.[91]

Specific recommendations made by Harrison Ballard and Allen with respect to the study area are dealt with fully in the section on zoning in this study of Lower Manhattan.

Of long standing economic and picturesque importance to the city is the famed Fulton Fish Market. This facility in the study area was the subject of an intensive analysis in 1953 made a firm of consulting engineers for the Department of Public Works.[92] The facilities of the entire Fulton Fish Market area and the operation of the fish business were carefully studied. The report stressed the economic importance of the activity and its relative stability. Of particular interest was the finding that pier space was of only minor significance while parking and unloading berths were of major importance since 86% of all unloads arrived by long distance truck. Concluding that the present location was the "result of long organic development" and that no reason for change was indicated; and because the provision of a wholly integrated new market facility would require 9 acres of land and the expenditure of $25 million (most of which the city would have to provide), the major

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[91] Harrison, Ballard and Allen, Op. cit.

[92] Madigan - Hyland, Fulton Fish Market Study (New York: 1953) 79 pages, mimeo.

recommendation called for a new building costing $1.6 million located further out over the East River between piers 17 and 18.[93]

In March, 1955, the New York State Temporary Commission on Agriculture released the findings on a two year study of the produce market in Lower Manhattan.[94] This study marked the first legislative excursion into a market problem which had been the subject of numerous studies over the previous forty years. The Commission recommended a modern wholesale marketing facility to be constructed, estimated to cost $45 million, as soon as possible in the present market area. This implications for the study area are obvious - the reduction of traffic congestion and the impetus given to further redevelopment of other functional areas.

This recommendation for the produce area is diametrically opposite to that made by the City Club of New York.[95] In demonstrating how a redevelopment program should be effectuated, the report recommends that the produce area of approximately 150 acres be redeveloped essentially as a residential area with office buildings, shopping and other facilities. A major factor in the recommendation seems to be that no relocation of residential tenants would be involved, and that the produce market should be relocated so as to have direct access to railroad and waterborn transportation without transhipment.

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[93] Madigan-Hyland, Op.cit.

[94] New York State Temporary Commission on Agriculture, The Washington Street Produce Market in New York City (Albany: Legislative Document No. ,1955) 25 pages, mimeo.

[95] The City Club of New York, A Practical Program for Replanning the City of of New York (New York: The City Club, 1955) 16 pages.

The control of New York City's waterfront is the subject of a long, bitter and generally hidden struggle between the Department of Marine and Aviation and the Port of New York Authority. Currently vested with the responsibility of administering City-owned piers and waterfront facilities and the proper regulation of the use of all 576 miles of waterfront property in the city, the Department of Marine and Aviation has in recent years been faced with the threat of being compelled to relinquish much of this function to the Port of New York Authority. In its 1956 progress report to the Mayor, the Department has outlined its ambitious program of reconstruction and rehabilitation designed to restore the port to its position of pre-eminence.[96] While substantively the proposals of the two agencies involved in the hidden struggle may essentially be identical, a decisive victory for either will have significant impact upon port activities, the full extent of which cannot even be estimated.

Of particular concern to the metropolitan area has been the complex problem of rapid transit. Culminating an intensive and detailed three year study begun in 1954 was the final report to the Metropolitan Rapid Transit Commission, a bi-state agency.[97]

The major recommendation calls for the establishment of a permanent bi-state public agency with wide powers to retain and improve mass transporta-

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[96] Department of Marine and Aviation, Rebuilding New York City's Waterfront (New York: 1956) 39 pages.

[97] Metropolitan Rapid Transit Commission, Metropolitan Rapid Transit Survey (New York: May, 1957) 52 pages.

tion service between New York City and surrounding areas. Essential to this improvement of service would be the extension of the New York City rapid transit system to connect with the suburban railroads in New Jersey. While a number of different proposals are analyzed, all have in common a loop system running from about Battery Park north through the core of the study area. The advantages accruing to the study area from the implementation of these proposals are spelled out as a system of increased comfort, convenience and speed making Manhattan's unique employment opportunities more readily available to the New Jersey labor pool.

That the area south of Chambers Street continues to compel attention to be focused on its pressing problems is evidenced by the report of the most recent completed study.[98] This report endeavors to define the scope of the functions of the sponsoring Committee, to outline a program of activities within the defined scope, and to recommend the size and type of staff and budget necessary to conduct the recommended program of activities.

While discussing in some detail a wealth of factual matter pertaining to the area, the report essentially outlines a program of research for immediate action by the sponsoring Committee. That such action has already been undertaken by assigning the firm of Skidmore, Owings and Merrill to prepare a study of the area in line with the recommended program of activities and to formulate specific and detailed recommendations attests to

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[98] Hugh Pomery and S.J. Schulman, Program Study for The New York State Chamber of Commerce Committee on Lower Manhattan Redevelopment (New York: January 1957) mimeo, 65 pages.

the excellence of the Pomeroy and Schulman study.

Undoubtedly there have been other significant studies relating to the area south of Chamber Street. The limitations imposed by the purpose of this study, together with those of time and space, preclude any further investigation of previous research. The studies summarized in this section give some indication of the magnitude and complexities of the problems involved, and shed considerable light on the areas of investigation and upon the recommendations made.

CHAPTER III

Population, Housing and Community Facilities

As the city grew and the study area became a smaller and smaller unit of the expanding city, marked changes took place, both quantatively in the composition of population and the housing stock. The transition from a small community with its varied commercial activities and its residential areas to an integral component of the central business district has been marked by the continuing decline in the numbers of people and in the numbers and quality of housing existing in the study area.

In 1950, the total number of persons enumerated in the 9 complete and 2 partial census tracts within the study area totalled 3,817[99] a figure comparable with the population total of about 4,000 reached by the Dutch settlement of New Amsterdam in the year 1694.[100] Because of apparent differences in family size, it would appear that the 1950 total of dwelling units was not approximated until 1703.[101] The 1950 population and housing counts in the study area therefore represent the lowest points in approximately 260 years. There is every reason to believe that the decline will continue, and there appears to be no reason why such a development is not eminently desirable.

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[99] 1950 Census of Population .

[100] Neufeld, op. cit., p. 68 .

[101] Ibid., p. 68.

What housing there is in the area was generally erected prior to 1919, with a substantial percentage now dilapidated.[102] Two census tracts, 13 and that part of 25 in the area, account for 528 of the entire total of 681 dwelling units. In tract 13, the housing represents a small residential enclave not far from the mouth of the Brooklyn-Battery Tunnel. In tract 25, the residential units are concentrated near Smith Houses, a low income public housing project, statistics for which are excluded from this study.

Average monthly rentals ranged from a low of $18.00 to a high of $43.08 in 1950. Similarly, median family income by tract ranged from $1,016 to $3,643, with an area median of approximately $2,300.

Data on age and sex characteristics of the 3,817 persons enumerated in the 1950 Census of Population reveal a heavy preponderance of males and an exceedingly small number of persons younger than 21 years of age. This shortage of younger people is graphically illustrated by school enrollments from the area which have hovered in recent years between 20 to 30 children.[103]

Economic data reveals a predominance of craftsmen, operatives, laborers, and service workers, with a sprinkling of professionals, managers, clerical, and sales workers.

The area around Smith Houses is part of an Italian community while the enclave near the Battery Tunnel entrance is generally identified as being Armenian despite the Census classification of Czechoslovakian.

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[102] 1940 and 1950 Census of Population.

[103] Board of Education, Utilization Tables.

No significant conclusions can be derived from analysis of the population data other than that already touched upon. While the housing in tract 25 is more closely related to a residential community with its related facilities, the enclave in tract 13 and the small scattering of dwelling units elsewhere in the area represent a steadily dwindling residue whose existence is probably contigent upon the complexities of the housing market and real estate speculation.

TABLE 1

A PLANNING STUDY OF LOWER MANHATTAN POPULATION, PERSONS PER ACRE & DWELLING UNITS BY CENSUS TRACTS

Census Tract	1950 Population	Acres	Persons Per Acre	Dwelling Units 1950	Dwelling Units 1957
7	458	51	9	47	47
9	1,093	54	20	46	46
11	-	33	-	-	-
13	1,046	54	19	284	238
15	49	41	1	10	10
17	96	39	2	23	23
19	214	37	6	32	32
21	168	31	5	11	11
23	188	36	5	30	30
25 (Part)	505	36	-	244	244
31 (Part)	-	11	-	-	-
Totals	3,817	423	9	727	681

Sources: 1950 Census of Population
Department of City Planning
Sanborn Map Company

In 1956, the Master Plan of Sections Containing Areas Suitable for Development and Redevelopment was modified to include a new section M-19, bounded by South Street, Whitehall Street, Water and Pearl Streets and Coenties Slip West. Such inclusion signified that the new section contained "substandard and insanitary areas suitable for clearance, replanning, reconstruction and rehabilitation for predominantly residential use," and the act of inclusion was necessary in connection with a proposal by Robert Moses that an 850-unit project be constructed in the area under the Title I provisions of the Housing Act of 1954.

It is difficult to ascertain how far back in time this proposal for some residential redevelopment south of Chambers Street has its genesis. A comment to the effect that there is no reason why a limited amount of apartments should not be built south of Chambers Street and located near the water appeared in a book by Cleveland Rodgers in 1943.[104] Several years later Rodgers was to doxologize his fellow member of the City Planning Commission, Robert Moses in a somewhat pedestrian work which was rather quickly remaindered. With the recent pronouncement by Commissioner Moses regarding housing near Battery Park, one is a trifle inclined to wonder just whose thinking was reflected in Rodgers' book.

Considerable controversy has been raised over the proposal to redevelop the five acre section with Title I housing. The objections generally emphasize the non-residential character of the area, the lack of community facilities, traffic generating uses that already tax existing arteries, the vital need for space for expansion of the financial area

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[104] Cleveland Rodgers; New York Plans for the Future (New York: Harper & Brothers, 1943).

and its service components, the availability of more suitably located and desirable residential redevelopment areas, and the absence of any objective and definitive study on the subject.[105]

The demand for residential accommodations, the availability of other sections for non-residential renewal and redevelopment, the convenience of location, the provision of adequate light and air and the specious argument that small apartments for single persons and two-person families would make unessential community facilities were reasons advanced successfully in having section M-19 designated as suitable for residential redevelopment.[106]

Whatever the merits of the case for or against housing south of Chambers Street, it must be assumed on an empirical basis that Mosaic decree will be successful in effectuating the proposed Battery Park project. Consequently two proposals are presented in this study with respect to redeveloping the area: one based on a rational land use approach and the other based on a seemingly realistic if somewhat irrational approach dictated by forces too great for mere planners to comprehend.

Community Facilities

Little mention need be made regarding community facilities other than to record the almost total absence of all types.

Public School 29, which continues for some obscure reason to serve the area's 30 school children together with possibly five times that number transported from areas having their own underutilized schools, is an

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[105] City Planning Commission, Report of Hearing December 19, 1956 on CP - 12751.

[106] See Appendix B for full report of the City Planning Commission adopting Section M-19.

obsolete and inadequate structure built in 1894. It could have been demolished more than a decade ago, but will probably be uneconomically utilized for another decade to come. It should be torn down immediately, the site sold, and its enrollment transferred to schools in the Lower East Side.

Hospital facilities are provided by the Beekman-Downtown Hospital, housed several years ago in a new structure. This 168-bed hospital is a voluntary institution serving a wide area in Lower Manhattan.

No public library is located south of Chambers Street although the limited facilities of the Municipal Reference Library in the Municipal Building are available to the general public. Similarly, recreational facilities, meeting halls, museums or exhibition rooms, etc. are non-existent.

What public facilities do exist, such as post offices, fire and police stations, and municipal offices are generally scattered in relative isolation from one another when groupings of various kinds would be more convenient, attractive, economical, and functional.

CHAPTER IV

Land Use and Zoning

Land Use

Together with population and housing data, land use studies represent perhaps the most basic planning information as a point of departure for effective community planning, while zoning is regarded as a major tool in the effectuation of the plan. Consequently research into the use and intensity of use of land, functional relationships,and the devices of control are of paramount importance in any planning study.

Lower Manhattan is an area marked by a wide diversity of economic activities, only some of which are functionally related, while others have a historic basis for their location. That the area lacks a unified pattern of interrelated functions can best be indicated through Figure 8 on page 43 which demonstrates in a generalized fashion the spatial extent and relationship between the major economic activities utilizing land.

The traditional land use survey with its reliance on zoning districts permitting groups of uses is considered unsuitable for functional classification of Central Business District activities.[107] Various methods, identified as (1) directory, (2) hard core, and (3) space use have been developed to establish a functional classification of Central Business District activities.[108] Ele-

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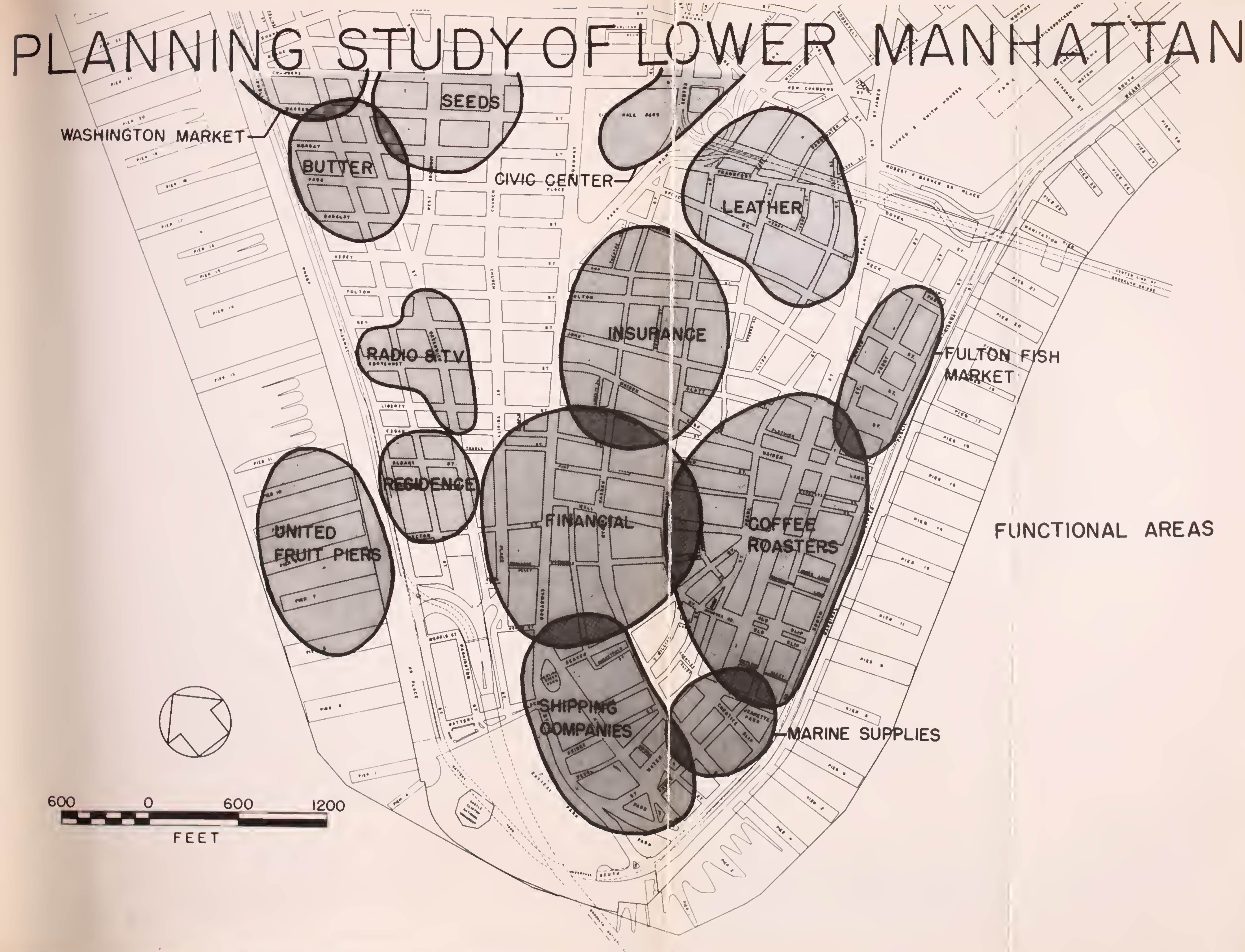
[107] Harland Bartholomew, Land Uses in American Cities: (Cambridge; Harvard University Press. 1955).

[108] *Ibid*.

PLANNING STUDY OF LOWER MANHATTAN



FUNCTIONAL AREAS

FIGURE 8

ments of all three approaches are present in the broad delimiting of the functional areas south of Chambers Street as illustrated in the aforementioned Figure 8.

The core of the area, where land values are highest, is relatively small in extent and houses such activities as banking, insurance and shipping. By contrast, the larger peripheral sections of the study area surrounding the core contain a considerable number of functions seemingly bearing little, if any, relationship to the activities carried on within the core. Because of wide dispersion throughout much of the study area, a considerable number of activities cannot be shown. Included in this category are such diverse functions as retail shops, new and used furniture stores, trucking establishments, machine shops, warehouses, wholesalers, church equipment firms and a plethora of surplus hardware and job-lot stores.

In 1957, the Sanborn Map Company compiled for the Department of City Planning, a comprehensive quantitative analysis of land use by census tract for the entire city. The amount of acreage in streets and in thirteen use classifications, totalling sixteen uses was computed. In addition, Sanborn computed the percentage of total census tract acreage for each use category.

Table 2 on page 45 indicates quite dramatically that streets in the Lower Manhattan area occupy the greatest percentage of total land area - approximately 48%. While it is undoubtedly true that this figure is high because of arterial traffic facilities within the study area, it is equally true that the street pattern which has survived relatively unchanged from Dutch days is inadequate, inefficient and uneconomical to meet modern needs and that an excessive amount of land is utilized for circulation. Ironically,

while an excess amount of land area is in streets, the street system cann efficiently cope with the daily demands placed upon it. (Unfortunately streets in New York generally have a political mantle of sacrosanctness about them which makes closing and realignments extremely difficult to obtain except in relatively rare instances.)

The net land area is represented by approximately 221 acres when the 202 acres in streets are deducted from the 423 acres in the 11 study area census tracts. A study area summary of the detailed breakdown given for the 13 use categories in each census tract shows the following net acreages and their percent of the total:

TABLE 2

Land Use Categories		Acres	Percent*
	All	423	100.0
	Street Area	201.6	48.0
#1	Vacant	3.7	0.9
#1-P	Licensed Parking	5.1	1.2
#2	Parks	33.7	8.0
#5,6,7	Residential	4.1	1.0
#8,8-0	Commercial and Offices	88.5	20.9
#9,9-W	Light Industry and Warehousing	63.8	15.0
#10	Automotive	6.8	1.6
#11	Heavy Industry	3.2	0.8
#12	Institutional	12.3	3.0
#13	Transportation	0.2	-

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*May equal more than 100% due to rounding.

Table 3 following page 47 gives a breakdown for each land use category by census tract.

Of the net area of approximately 221 acres, excluding streets which represent about 48% of the total land area, commercial and office uses occupy about 40%. Most of this store and office use is concentrated in the center of the area.

Less than 30% of the net land area is utilized by warehousing and light industry, and approximately 9% of the area is in park land - principally Battery Park and City Hall Park.

Most of the uses other than offices and stores form the periphery of Lower Manhattan.

Figure 9 on page 49 depicts the existing 1955-56 land use throughout the study area. Compiled and colored by the Sanborn Map Company, the land use map graphically indicates the variety and extent of uses in the area, and makes more meaningful the quantitative data presented in Tables 2 and 3.

The concentration of office building in the core, the admixture of conflicting uses in the peripheral area, the almost total absence of vacant land and the obsolete street system become readily apparent through examination of the map.

An important consideration in any land use analysis is the intensity of land use. Such intensity is associated with land value patterns. Measurements of the intensity of land use can be obtained through various approaches. Among these approaches are density or population per unit of land area, coverage or the percentage of ground area covered by buildings, and floor area ratios or the ratio of total floor area to site area.

Use of all three methods merely reaffirms what is readily visible to even the casual observer - that the study area represents one of the most intensively utilized geographical units in the world. In terms of density, approximately 220 acres exclusive of streets is occupied by a daytime population of more than one third of a million persons - some 165,000 people to an acre. Coverage for most buildings, including those on the periphery which were mostly constructed about 100 years ago or before and those of 1920 and 1930 vintage in the core, is almost 100% except in a few isolated cases. Of 315 study area structures for which floor area ratios were computed, 16% were below an F.A.R. of 7.0, 26% between 7.1 and 10.0; 30% between 10.1 and 15.0; 14% between 15.1 and 20.0; 8% between 20.1 and 25.0; and 6% had F.A.R.'s higher than 25.1. For 20 cases of post-war construction in the study area, the range of floor area ratios was from 10.5 to 26.2, with a median of 15.6.

A list of the major structures in the study area, with data on height, the number of stories, rentable floor area and date of construction is given in Appendix C.

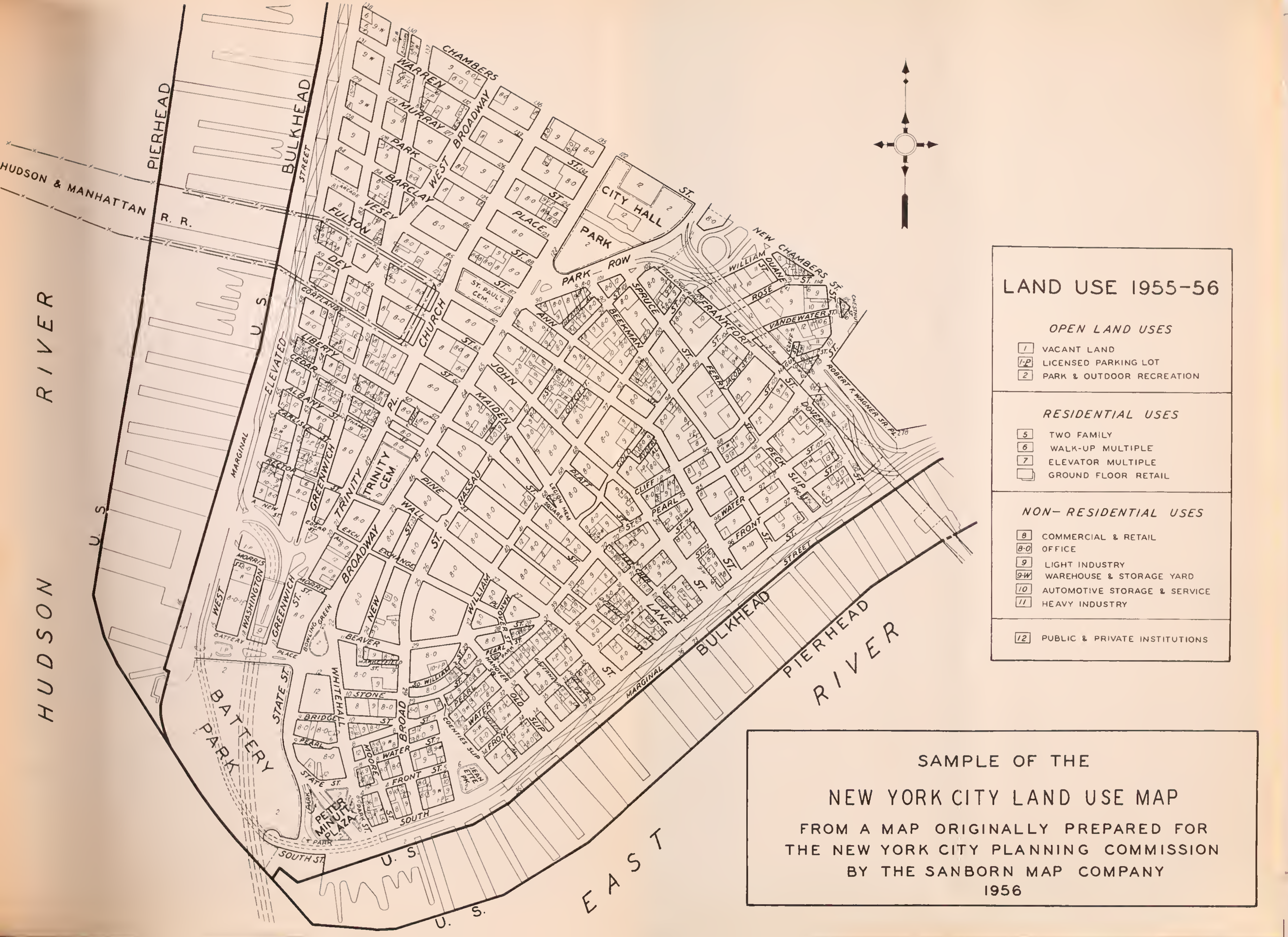
The intensity of use in the core, the relative newness of most of the major structures, and the prohibitive costs involved make any proposed future comprehensive redevelopment of the core a long-term undertaking of tremendous magnitude.

TABLE 3

A PLANNING STUDY OF LOWER MANHATTAN
QUANTITATIVE ANALYSIS: LAND USE BY CENSUS TRACT

1956 - 1957

Tract	Total Acres	Street Area	LAND USE CATEGORIES													
			1	1-P	2	5	6	7	8	8-0	9	9-W	10	11	12	13
7	51 100%	25.2 49%	1.5 3%	1.0 2%	0.1	0.1	0.1		0.9 2%	17.2 34%	3.4 7%	0.3 1%	0.2		1.0 2%	
9	54 100%	25.5 47%	0.3 1%	0.1	0.8 1%		0.6 1%		1.5 3%	16.0 30%	3.7 7%	2.3 4%	0.8 1%	0.1	2.2 4%	0.1
11	33 100%	9.2 28%	0.2 1%	0.4 1%	23.2 70%											
13	54 100%	32.1 59%	0.5 1%	0.7 1%	0.7 1%	0.2	0.8 1%		1.5 3%	11.3 21%	2.0 4%	0.1	1.2 2%		2.9 5%	
15	41 100%	17.9 44%	0.8 2%	0.9 2%	0.2		0.2		0.7 2%	3.6 9%	14.0 34%	1.1 3%	0.7 2%	0.7 2%	0.2	
17	39 100%	15.4 39%	0.1		0.1				3.7 9%	11.4 29%	6.9 18%	0.1	0.2 1%	0.1	1.0 4%	
19	37 100%	19.3 52%		0.2 1%			0.6 2%		3.4 9%	6.4 17%	4.0 11%	0.2 1%	0.6 2%		2.3 6%	
21	31 100%	13.9 45%	0.1	0.4 1%				0.2 1%	1.4 5%	6.6 21%	8.1 26%				0.3 1%	
23	36 100%	21.7 60%	0.1	0.7 2%		0.1	0.6 2%		1.1 3%	0.7 2%	5.7 16%	4.0 11%	1.2 3%		0.1	
25 PT	36 100%	18.9 52%	0.1	0.7 2%			0.6 2%		0.4 1%	0.7 2%	6.6 18%	1.3 3%	1.9 5%	2.3 6%	2.3 6%	0.1
31 PT	11 100%	2.5 22%			8.6 88.5%											
TOTALS	423 100%	201.6 48%	3.7 .9%	5.1 1.2%	33.7 8%	0.4	3.5 .8%	0.2	14.6 3.4%	73.9 17.5%	54.4 13%	9.4 2%	6.8 1.6%	3.2 .8%	12.3 3%	0.2



SAMPLE OF THE

NEW YORK CITY LAND USE MAP

FROM A MAP ORIGINALLY PREPARED FOR
THE NEW YORK CITY PLANNING COMMISSION
BY THE SANBORN MAP COMPANY
1956

The confusion of uses incompatible with the principal use in such identifiable functional concentrations as the financial and insurance centers and the admixture of uses outside the concentrations of specific uses are such that only a total reorganization of land uses can insure a health future for Lower Manhattan. Such a reorganization must be based upon a rational determination of what uses are to remain in Lower Manhattan, what should be relocated -- both within the area and outside of it, and what uses should be allowed ultimately to die out.

Zoning

New York City's Zoning Ordinance, adopted in 1916, was the first major comprehensive zoning law in the United States. Its enactment is considered to have been precipitated in large measure by the construction within the study area at 120 Broadway of the 44 story Equitable Building. Fronting on narrow streets, the Equitable Building has a sheer rise of 542 feet uninterrupted by any setbacks, with the resultant deprivation of adequate access to light and air to surrounding structures.

Coincidentally with the construction of the Equitable Building was the movement of the northern fringe of the textile industry up lower Fifth Avenue. The concern for protecting residential areas from industrial intrusion coupled with the need for imposing limits on the rights of property owners to develop their parcels without due regard for adjoining properties gave tremendous impetus toward the enactment of the zoning ordinance of 1916.

Building bulk control was established through limitations of the percentage of lot coverage; height restrictions expressed as multiples of

fronting street width; and front and rear setbacks above such height limits. These provisions, although modified extensively, still are in force and provide the basic framework of bulk control.

Originally, three use districts - residential, business and industrial, were provided for in the 1916 ordinance. Subsequent amendments designed to meet the needs of the city's diversified activities and to refine the degree of control,have increased the total number of classes of use districts to 9: residence, local retail, restricted retail, retail-1, business, business-1, manufacturing, and unrestricted.[109] Area and height districts have also undergone considerable expansion and modification.

Figure 10 on page 52 shows the area and height districts currently applicable to the study area. In terms of bulk control, Lower Manhattan may be considered to be rather loosely regulated in that the bulkiest buildings are permitted to be erected in the area. That few new structures go to the maximum of the zoning envelope permitted by law, is due largely for reasons such as the cost of land, space demands and rental levels, and the economics of construction.

Figure 11 on page 53 indicates the existing use districts in the area. The core of the area is zoned for business while the periphery along the waterfront and for a minimum depth of three blocks is zoned unrestricted. Smaller areas are zoned manufacturing and retail. The business zone is generally designed for major commercial uses but does permit most types of loft manufacturing to a maximum of 25% of the total floor space in each

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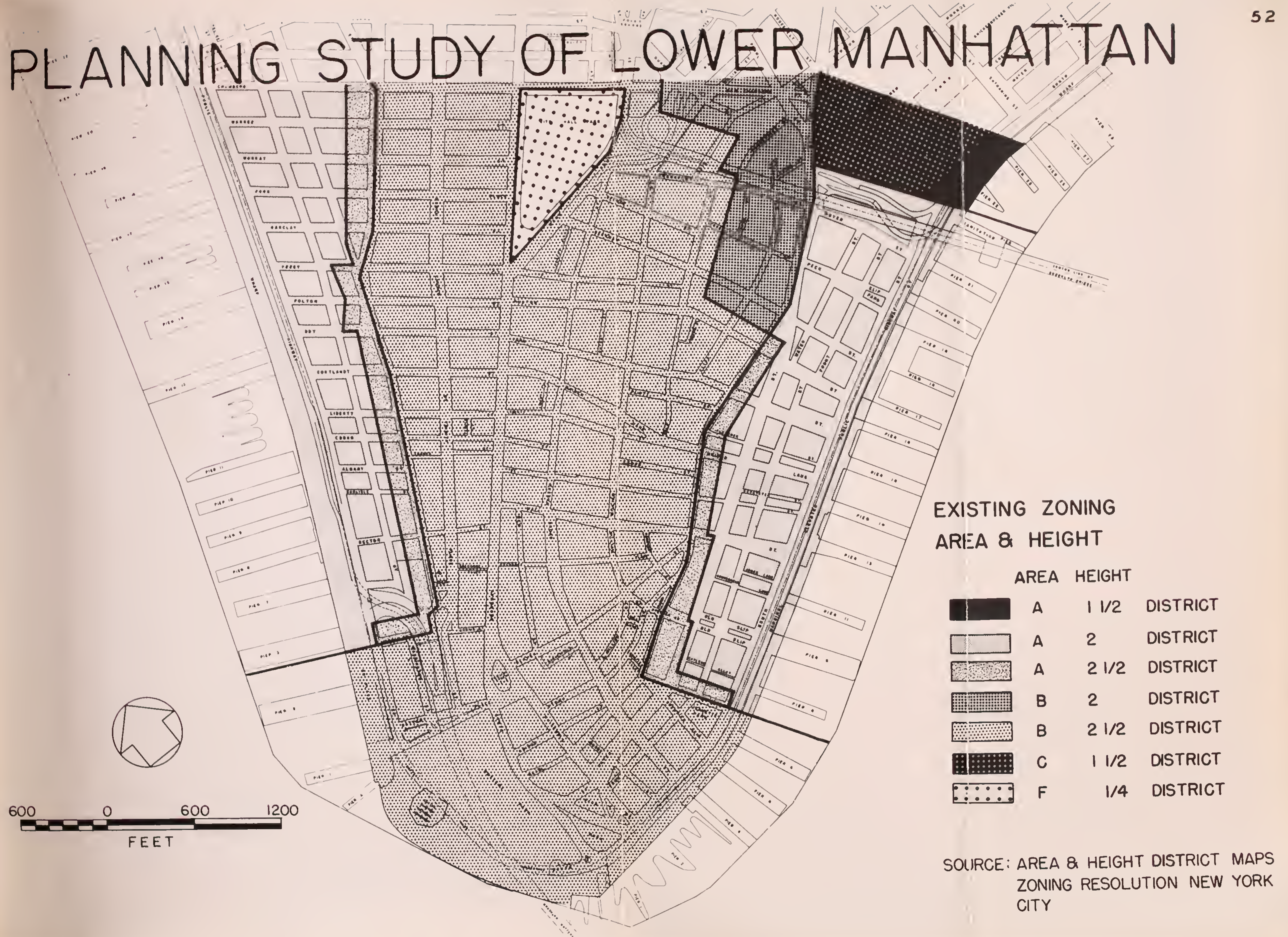
[109] Zoning Ordinance of the City of New York

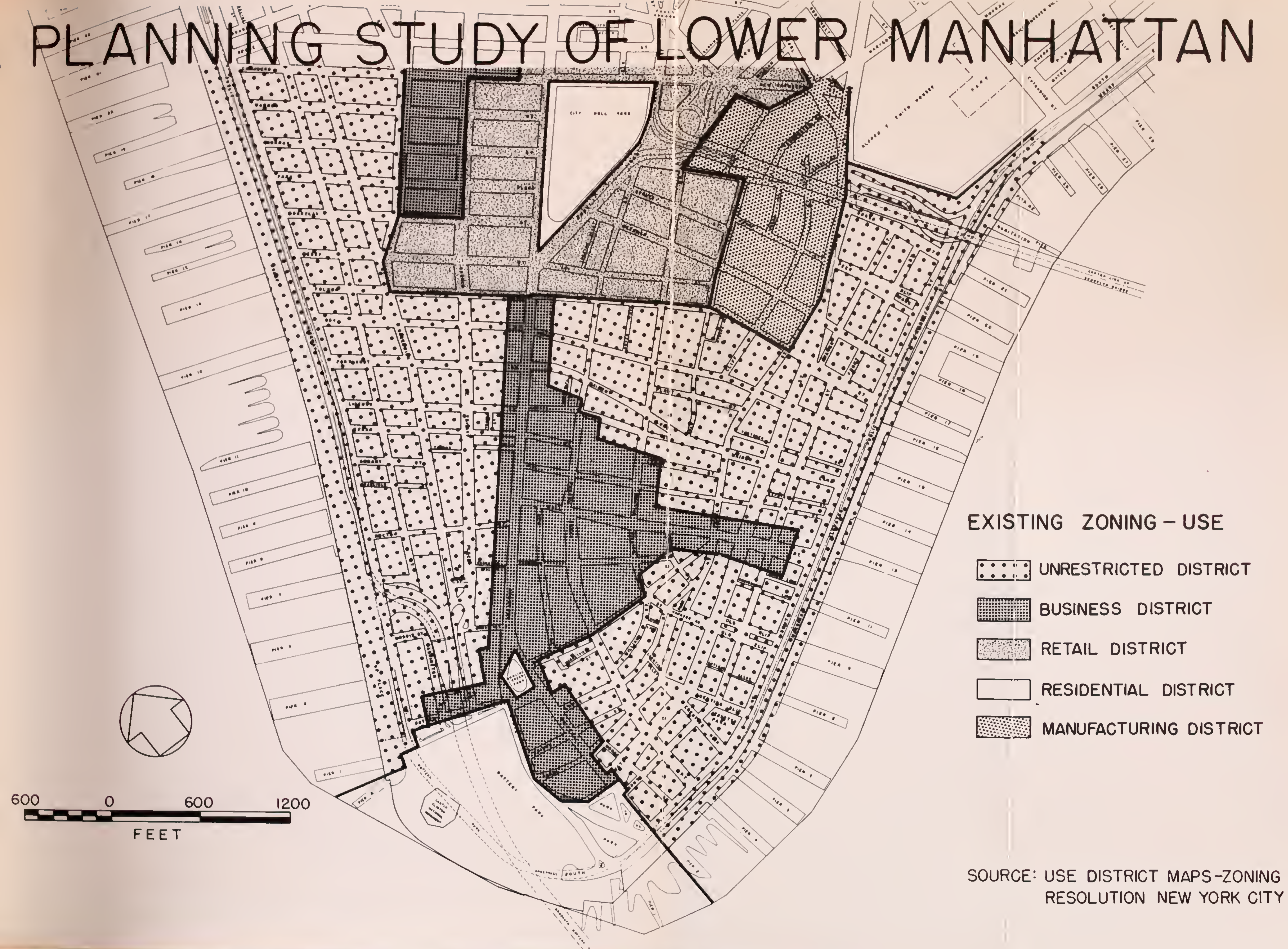
A PLANNING STUDY OF LOWER MANHATTAN



SOURCE: AREA & HEIGHT DISTRICT MAPS ZONING RESOLUTION NEW YORK CITY

FIGURE 10

PLANNING STUDY OF LOWER MANHATTAN



SOURCE: USE DISTRICT MAPS-ZONING RESOLUTION NEW YORK CITY

FIGURE 11

building. Heavy manufacturing and noxious uses are excluded from this district.

The unrestricted district, as its name implies, permits any use. It is obvious therefore that the looseness of both the business and unrestricted districts have reinforced the pattern of conflicting and incompatible land uses which are one of the major problems of the area.

Figure 12 on page 55 indicates the proposals made by Harrison, Ballard and Allen with respect to the study area in their extensive rezoning plan.[110]

The Harrison, Ballard and Allen rezoning plan called for the establishment of 15 districts as follows: 6 residence and associated, 5 commercial, and 4 manufacturing. Within each of these zoning districts only such uses could locate as were permitted by the ordinance. The uses of buildings, other structures and tracts of land were broken down into 18 different use groups arranged within the following classifications:

Use Groups	Category
1 - 3	Residential
4 - 5	Community Facilities
6 - 9	Retail and Commercial
10 - 12	Wholesale and Commercial
13	Heavy Commercial and Automotive
14 - 18	Manufacturing

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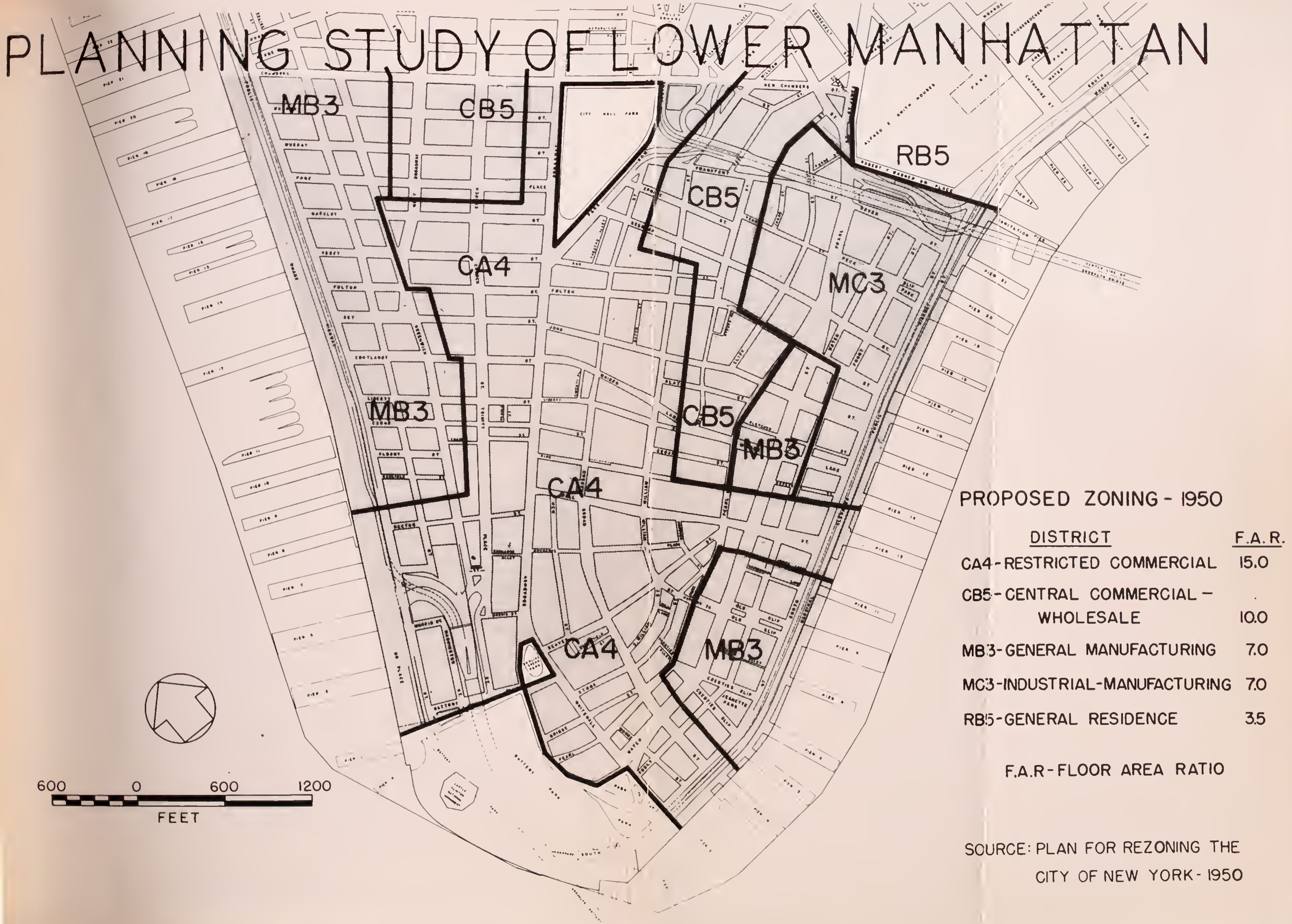
[110] Harrison, Ballard and Allen, op. cit.



PLANNING STUDY OF LOWER MANHATTAN

PROPOSED ZONING - 1950

DISTRICT	F.A.R.
CA4-RESTRICTED COMMERCIAL	15.0
CB5-CENTRAL COMMERCIAL - WHOLESALE	10.0
MB3-GENERAL MANUFACTURING	7.0
MC3-INDUSTRIAL-MANUFACTURING	7.0
RB5-GENERAL RESIDENCE	3.5

F.A.R-FLOOR AREA RATIO

SOURCE: PLAN FOR REZONING THE CITY OF NEW YORK - 1950

FIGURE 12

Since the section on previous studies discusses some of the devices and techniques proposed in the Plan for Rezoning it is unnecessary here to go into any detail.

With respect to the study area, the significant observation to be made from the analysis of Figure 12 is that a very considerable contraction was proposed for manufacturing uses and that conversely, the commercial and retail uses were expanded.

The core of the area was designated as a CA-4 or Restricted Commercial district having a permissable floor area ratio of 15.00 and permitting all uses in groups 1 through 7 inclusive and 9. A smaller section of the area was designated as a CB-5 or General Commercial - Wholesale district with a floor area ratio of 10.00 and all uses in groups 1 through 10 inclusive permitted.

Most of the Hudson River waterfront, a portion of the East River waterfront, and a small inland pocket were designated as MB-3 or General Manufacturing Districts with a 7.00 floor area ratio and use groups 4 through 11 and 13 through 16 permitted. The remainder of the area fell into an MC-3 or Industrial Manufacturing district with a floor area ratio of 7.00 permitted and with use groups 4 through 17 allowed. Residences in both M districts would be prohibited.

Presently the architectural firm of Voorhees, Walker, Smith and Smith are engaged in another comprehensive study directed toward the objective of securing a new zoning ordinance for New York City. While many of the proposals contained in the Harrison, Ballard and Allen plan have been adopted into the existing ordinance, the entire plan itself was never adopted,

due in large measure to the opposition of special interest groups, poor public and community relations, and political ineptness and vacillation.

Preliminary indications are that while the Voorhees, Walker, Smith and Smith proposals will lean heavily on the Harrison, Ballard and Allen report, there will be considerable and significant departures from the techniques and recommendations of the earlier report, with a generally tighter and more realistic set of zoning districts and use groups.

Such a tightening is eminently desirable within the study area if a functional and economic land use pattern is to be achieved and perpetuated.

CHAPTER V

Economic Base

Realistic planning for the future of the city is not only dependent upon knowledge of population, housing and land use considerations, but upon a complete understanding of economic activity - the things a community produces and the services which it performs. The types and number of jobs available are the foundation upon which the size and character of the population and the ability to pay for civic improvements rest.

While only a negligible number of persons reside south of Chambers Street, by day the area is occupied by approximately one third of a million people employed in a wide variety of activities.

Table 4 indicates the percentage of the total number of New York City workers employed in various activities south of Canal Street in 1950 as compared to the percentage of New York City residents living south of Canal Street in 1950. The choice of the northern boundary in this study by the New York State Department of Labor affects the utility of the data only slightly -- since basic determinations about the study area can still be validly derived. For example, 50.94% of the city's employed below Canal Street work in financial, insurance and real estate classifications almost completely centered south of Chambers Street, while only 0.42%. New York residents live in the area. The ranges in other industry groups are not as great but clearly indicate that a substantial portion of the city's employed work in the study area while an insignificant portion of its total residents live there. In addition to the financial, insurance and real estate group, the major employment activities are commercial and

public utilities with 24.00% of the city's employed, white-collar with 22.77%, and wholesale trade with 20.84%.

TABLE 4

A PLANNING STUDY OF LOWER MANHATTAN
EMPLOYMENT AND RESIDENCE - 1950
AREA SOUTH OF CANAL STREET

Industry	% of Total Employed N.Y.C. Workers	% of Total N.Y.C. Residents
Manufacturing	4.72	0.24
Metal Working Industries	4.53	0.18
Metal Fabricating Industries	2.36	0.20
Electrical Machinery	2.51	0.18
Transportation Equipment	5.82	0.11
Apparel	0.82	0.26
Selected Industries	14.40	0.28
White Collar	22.77	0.27
Wholesale Trade	20.84	0.26
Retail Trade	2.44	0.22
Finance, Insurance & Real Estate	50.94	0.42
Service Industries	4.52	0.52
Commercial & Public Utilities	24.00	0.18

SOURCE: Division of Employment, Bureau of Research and Statistics
New York State Department of Labor

Outside of a group of selected industries at 14.40%, the range in the remaining 8 categories runs from a low of 0.82% in apparrel to a high of 5.82% in transportation equipment. For persons employed in the thirteen industry categories given and living in the study area, 0.11% working in transportation equipment and 0.52% employed in service industries represent the range of percentage of total New York City residents. It can be anticipated that the number of residents in the area will continue to decline slowly unless the proposed Battery Park Title I development materializes. While the population of the area may be expected to as much as triple under such conditions, the net effect on the percentages of total New York City residents employed in the 13 industry groups in the area will be insignificant.

More refined data from the State Department of Labor and the Department of City Planning present a picture of estimated 1950 employment in the area on a census tract basis as follows:

TABLE 5

ESTIMATED TOTAL 1950 EMPLOYMENT SOUTH OF CHAMBERS STREET BY CENSUS TRACT

Tract		Estimated Total Employment
7		134,100
9		86,100
11		1,100
13		93,400
15		19,800
17		51,300
19		30,700
21		27,800
23		12,700
	Total	457,000

Since this total includes employees of firms with headquarters located in the area but who work outside the area, a deduction estimated at more than 100,000 is in order, reducing the number of actually employed in the area to approximately one-third of a million. Approximately slightly less than 80% are employed in four census tracts - 7, 9, 13, and 17, essentially comprising the core of the area.

A further refinement of the character and location of employment in the study area is possible from 1950 data on a census tract basis for

firms with 12 or more employees in two digit industry groups as listed in the Federal Social Security Board's Standard Industrial Classification. It should be noted that employment in firms having fewer than 12 employees in not listed, nor are government workers. In addition, adjustments must be made for employees listed with firm headquarters for administrative and payroll purposes but employed outside the area.

This data is given in Table 6 consisting of pages 64, 65 and 66 and is a graphic indication both of the diversity and extent of economic activity in the area. Census tract 7 with 101,963 has the greatest number employed in the greatest number of industry groups - 48; while tract 23 with the fewest groups with 24 similarly has the fewest employed with 9,750. Census tracts 7, 9, 13, and 17 with 48, 45, 46, and 41 industry groups respectively also, as previously stated, show the greatest number of employed with 101,963; 63,478; 72,599 and 36,232 respectively. While employment in the area ranges from fewer than 36 persons in each of 7 industry groups to a high of 46,517 in Water Transportation, some 67 industry groups are represented in the area south of Chambers Street.

The ten major employment groups are:

Water Transportation	46,517
Banks and Trust Companies	46,200
Insurance Carriers	32,951
Services Allied to Transportation	29,281
Security Dealers & Investment Banking	25,401
Wholesale Distributors, Other Than Full Service & Limited Function	21,511

Communications; Telegraph, Telephone, Related Service	14,996
Business Services	13,553
Full Service & Limited Function Wholesalers	12,324
Real Estate	10,370

These employment groups represent almost 80% of the total employment in the area, with the first five groups accounting for over 50% of total employment.

Tables 7 and 8 give a slightly different view to employment in the area by industry group in that as of March 1955, there were firms having 500 or more employees with 253,250 workers, with an estimated 75,000 actually working outside the area. Consequently these establishments account for about 50% of all workers in the area.

EMPLOYMENT[a] IN FIRMS WITH 12 OR MORE WORKERS IN AREA APPROXIMATELY BELOW CHAMBERS STREET, 1950

STAND. IND'L CLASS.	INDUSTRY	CENSUS TRACT EMPLOYMENT 7	9	13	15	17	19	21	23	TOTAL EMPLOYMENT
07	Agricultural & Sim. Service Establish.	b								b
10	Metal Mining	278	71	88	231					668
12	Bituminous Etc. Mining			55						55
13	Crude Petrol.& Nat.Gas Production			66						66
14	Non-Metalic Mining & Quarrying			84						84
15	Bldg.Const.Gen.Contractors	260	249	193	b	91	308	61		1195
16	Gen.Contractors, Other Than Bldg.	b	200	1233		408	172	366		2409
17	Construction-Special Trade Contrac.	b	226	1554	217	294	89	782	283	3469
20	Food & Kindred Prod., Mfg.	4473		1360	b		b	b	184	6081
21	Tobacco Manufactures				b	b				b
22	Textile-Mill Products,			b		b				56
23	Apparel, Mfg.	b	42	b	b	b		129	b	255
24	Lumber & Wood Prod. (excl.Furnit) Mfg.		47							47
25	Furniture & Fixtures, Mfg.				b					b
27	Printing & Publishing	277	369	2354	977	341	682	874	2039	7913
28	Chemicals & Allied Prod., Mfg.	208	95	2577		98	335	90	251	3654
29	Products of Petroleum & Coal, Mfg.	64	2371	180						2615
30	Rubber Products, Mfg.							b		b
31	Leather & Leather Products, Mfg.	66			160	51		65	b	366
32	Stone, Clay & Glass Products, Mfg.		40	39	b	181		b	b	337
33	Primary Metal Industries, Mfg.	1869		435		270		b		2599
34	Fabricated Metal Products, Mfg.	b		53	197	74		102		450
35	Machinery (Exc.Electrical) Mfg.			64	99	b	513	62	b	768
36	Electrical Machinery, Mfg.	b	100	68			51	62	330	623
37	Transportation Equipment, Mfg.		93	1763			580			2436
38	Prof.,Scien.,Contrd.Equip.etc.,Mfg.		40		62	274		54	b	456
39	Miscellaneous Manuf.Industries			172	197	296	37	103	b	831
42	Trucking & Warehousing for Hire	175	1069	454	58	b	142	b	130	2062
43	Other Transportation, Exc.Water		303							303
44	Water Transportation	5443	15016	25211	37		767		b	46517
45	Services Allied to Transp. N.E.C.	3599	15093	10456	57		60		b	29281
46	Communications;Teleph.Teleg.Rel.Serv.	151	3091	92		993	6218	145	4306	14996

Table 6

EMPLOYMENT[a] IN FIRMS WITH 12 OR MORE WORKERS IN AREA APPROXIMATELY BELOW CHAMBERS STREET, 1950

STAND. IND'L CLASS.	INDUSTRY	CENSUS TRACT EMPLOYMENT								TOTAL EMPLOYMENT
		7	9	13	15	17	19	21	23	
48	Utilities: Electric & Gas	b	205							228
49	Local Util. & Local Pub.Serv.,N.E.C.	b	52						192	263
50	Full Serv.& Lim.Function Wholesalers	3390	1430	1724	1411	872	187	1477	1033	12324
51	Wholesale Distr.,Other Th.Full Serv. & Lim. Func.	3257	3772	5740	158	643	5171	2578	192	21511
52	Wholesale & Retail Trade Comb.,N.E.C.	b	111	133		303	56	57		674
53	Retail General Merchandise	85	b			851	227	75	b	1294
54	Retail Food & Liquor Stores				61	b	76		67	216
55	Retail, Automotive	41								41
56	Retail Apparel & Accessories	b	b	40		140	94	244		558
57	Retail Trade, N. E. C.	68	177	132	b	458	920	324		2105
58	Eating & Drinking places	2713	1320	1223	86	1723	779	169	150	8163
59	Retail Filling Stations	b								b
60	Banks & Trust Companies	35832	6342	1118		269	2410	229		46200
61	Security Agencies, N. E. C.	18833	3301	3137		95	b			25401
62	Finance Agencies, N. E. C.	779	826	668		132	154	68	175	2802
63	Insurance Carriers	3933	82	1242	7043	19490	195	966		32951
64	Insur. Agents, Brokers & Services	2418	173	135	2988	3796	67	152		9729
65	Real Estate	4101	1382	1798	182	1603	698	606		10370
66	Real Estate, Ins.,Loans,Ant.Comb.Law	268		47		b	102			429
67	Holding Companies (Exc.Re.Est.)	550	455	383		b	618			2024
70	Hotels, Rooming Houses, Camps, etc.	117				b		b		149
72	Personal Services	52	94	b		56	b	b		268
73	Business Services, N.E.C.	2491	2939	3516	106	1237	658	2422	184	13553
74	Employ. Agen. & Commer.& Trade Sch.		411	b	52		44	87	49	656
75	Automobile Repair Services & Garages	b	b				b			46
76	Miscell. Repair Serv. & Hand Trades		44		b	71	b			150
78	Motion Pictures		169							169
79	Amusement & Recreation & Rel.Serv.N.E.C.			363		79				442

EMPLOYMENT[a] IN FIRMS WITH 12 OR MORE WORKERS IN AREA APPROXIMATELY
BELOW CHAMBERS STREET, 1950

STAND. IND'L CLASS.	INDUSTRY	CENSUS TRACT EMPLOYMENT								TOTAL EMPLOYMENT
		7	9	13	15	17	19	21	23	
80	Medical & Other Health Services	b	b							b
81	Law Offices & Related Services	4624	883	677	147	220	201	64		6816
82	Educational Institutions & Agencies	39								39
83	Oth.Prof.& Soc.Serv.Agen.& Instit.	734	336	1725	b	353	159	1049		4385
86	Non Profit Membership Organizations	b	143	101	b	308	b	140		746
90	Private Households	486	244	76	b		b			839
99	Establishments - N. E. C.	b								b
	TOTAL	101963	63478	72599	14784	36232	23708	13756	9750	336295

(a) Excludes Government employment and employment in firms not covered by the New York State Unemployment Insurance Law.

(b) 36 or less employees.

Source: New York State Department of Labor

TABLE 7

A PLANNING STUDY OF LOWER MANHATTAN NON-MANUFACTURING FIRMS SOUTH OF CHAMBERS STREET WITH 500 OR MORE EMPLOYEES

Industrial Classification Code		No. Firms With 500 or More Employees
16	General Contracting other than Building	1
42,45	Trucking, Warehousing & Services Allied to Transportation	14
44	Water Transportation	17
46	Communication: Telegraph & Telephone & Related	7
50,51	Full Service & Limited Function Wholesalers & Wholesale Distributors	13
53	Retail General Merchandise	3
57,58	Retail Trade & Eating & Drinking Places	3
60,67	Banks, Trust and Holding Companies	15
61	Security Dealers & Investment Banking	6
63,64	Insurance Carriers, Agents, Brokers & Services	22
73,83	Business and Professional Services	6
		107

Source: New York State Department of Labor
New York City Department of City Planning

Note: Some firms reported all New York payrolls including employees not actually employed south of Chambers Street. No detailed breakdown available.

TABLE 8

A PLANNING STUDY OF LOWER MANHATTAN MANUFACTURING FIRMS SOUTH OF CHAMBERS STREET WITH 500 OR MORE EMPLOYEES

Industrial Classification Code		No. Firms With 500 or More Employees	
20	Food and Kindred Products	4	(a)
27	Printing, Publishing & Allied	5	(b)
33	Primary Metal	3	(c)
35,36, & 37	Machinery & Transportation Equip.	4	(d)
	Total	16	

Notes: (a) All New York City Payrolls reported for three firms.

(b) All New York City payrolls reported for one firm.

(c) Main offices. One plant in Queens, others out of town.

(d) General office for one firm, administrative payrolls for two, and all payrolls for remaining firm.

Source: New York State Department of Labor.
New York City Department of City Planning

New York City's population of 8 million contains a labor force of 3½ million, of whom 1 million are in manufacturing lines while the remaining 2½ million are engaged in non-manufacturing activities. Despite a decline in the proportion of workers employed in manufacturing from 1910 to date, manufacturing continues to be the most important component in the economy of the city and is the supporting base for many service industries.

Predictions for the future in terms of levels of employment are that the garment industry will remain the largest manufacturing unit in the city; machinery and metal fabricating employment will expand; wholesale trade will decline, retail trade will stabilize at present levels or decline slightly; trade and employment opportunities in port activities will decline slightly; a decline in railroad freight and passenger employment will be offset by increases in truck and airline employment; and white-collar and home office functions will expand substantially.

The anticipated 1960 decline in the labor force, coupled with the expected increase in total population and with population displacement, together with changes in the types of economic activity have serious implications for the city and for the study area.

It is expected that in the central business district there will be a gain in employment in service industries, home office functions and finance, and a decline in manufacturing, wholesale and retail trade. The decline in the labor force and the increase in population means that an increase of approximately 45% in real wages will be required by 1960. This increase will be necessary to maintain the rate achieved during the past decade of improvement in the standard of living to permit the smaller

labor force to support the larger population. Finally, the heavy in-migration of persons with skills more adaptable to industrial activities and the exodus of skilled and white collar workers to suburbia have long range implications in terms of transportation and other requirements.[111]

A number of major questions arise with respect to the economic base of the study area. These may be summarized briefly as follows: to what extent will the future of Lower Manhattan be affected by the diversity of economic activity now carried on? Which activities are likely to remain and which are likely to leave? What types of establishments are likely to replace those that leave? What effects will changes in demand have on rental levels and values?[112]

Some answers to some of these questions can be obtained from studies done by Harrison, Ballard and Allen in connection with their plan for rezoning,[113] and from research currently under way by the planning staff of Voorhees, Walker, Smith and Smith as a basis for their recommendations for

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[111] Material for this Section was developed from the following Bulletins of the Department of City Planning: Factory Location in New York City, August 26, 1954; Population Changes in New York City, November 22, 1954; Current Population Estimates, March 1, 1955; Post-War Economic Trends in New York City, May 2, 1955; Employment Distribution and Concentration in New York City, December, 1955; Employment Changes in New York City, April 1956; The Large Firms in New York City, December, 1956.

[112] Pomeroy and Schulman, op. cit.

[113] Harrison, Ballard and Allen, Business and Industrial Requirements Technical Report No. 3 (New York: 1949) 95 p.

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a new zoning ordinance.[114]

Of the industries surveyed in the H.B. and A. Study, the following were situated in Lower Manhattan in varying degrees in 1946 and location probabilities are consequently of interest in this study: women's and children's clothing manufacturers, men's and boy's clothing, printing and publishing, food and beverages, metal products and machinery, wood products and furniture, chemicals and allied products, banking, insurance, and management.

On the basis of observable historical trends, changing space requirements, type of structure used, special facilities needed, preferred locations, anticipated locations etc. as determined through interviews with industry leaders, some broad generalizations could be made with respect to the future of such activities within the study area. Of the activities enumerated above, it seems likely that women's and children's clothing, men's and boy's clothing and chemicals and allied products will gradually disappear from the area, while the balance will probably continue unless some unforeseen developments materialize.

Predictions as to what activities might come into the area to replace those leaving would be purely speculative. In one case, namely that of the chemical and allied products group, it is pressure from expanding insurance activities that is gradually forcing this industry further uptown to around the Canal Street area from the John-Beekman Street center of previous years.

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[114] Discussions with technical staff - June 1957 to April 1958 while in charge of mapping of Borough of Queens.

Retail Trade

In 1952, the New York Market Analysis[115] listed 2,257 retail stores with sales of $227,795,000 for the Battery Park area generally lying south of Canal and Catherine Streets. Figure 13 on page 73 indicates the location of the one primary shopping area on Broadway between Dey and Liberty Streets. From Dey to several blocks north of Chambers Street, Broadway is a continuous secondary shopping area strip. Similarly Fulton, Chambers, New and Cortland Streets, and Park Row for most of their lengths within the study area, and Greenwich, Whitehall, Vesey and Church Streets in parts are considered as secondary shopping areas.

Of the total of 2,257 retail establishments, eating and drinking places constitute almost 30%. This should come as a shock to those who have been compelled to dine in any number of barely acceptable eating places because of the seemingly apparent lack of good places in which to eat. The apparel group with approximately 15% of the total number of establishments is the next largest group. Table 9 on page 74 gives a detailed breakdown of the type of stores and their percentage of the total number of stores together with their percentage of total sales.

While the data indicates considerable and diversified retail activity, the study area unfortunately lacks really good, conveniently located and pleasant shopping areas that could compare favorably to those in other sections of the city.

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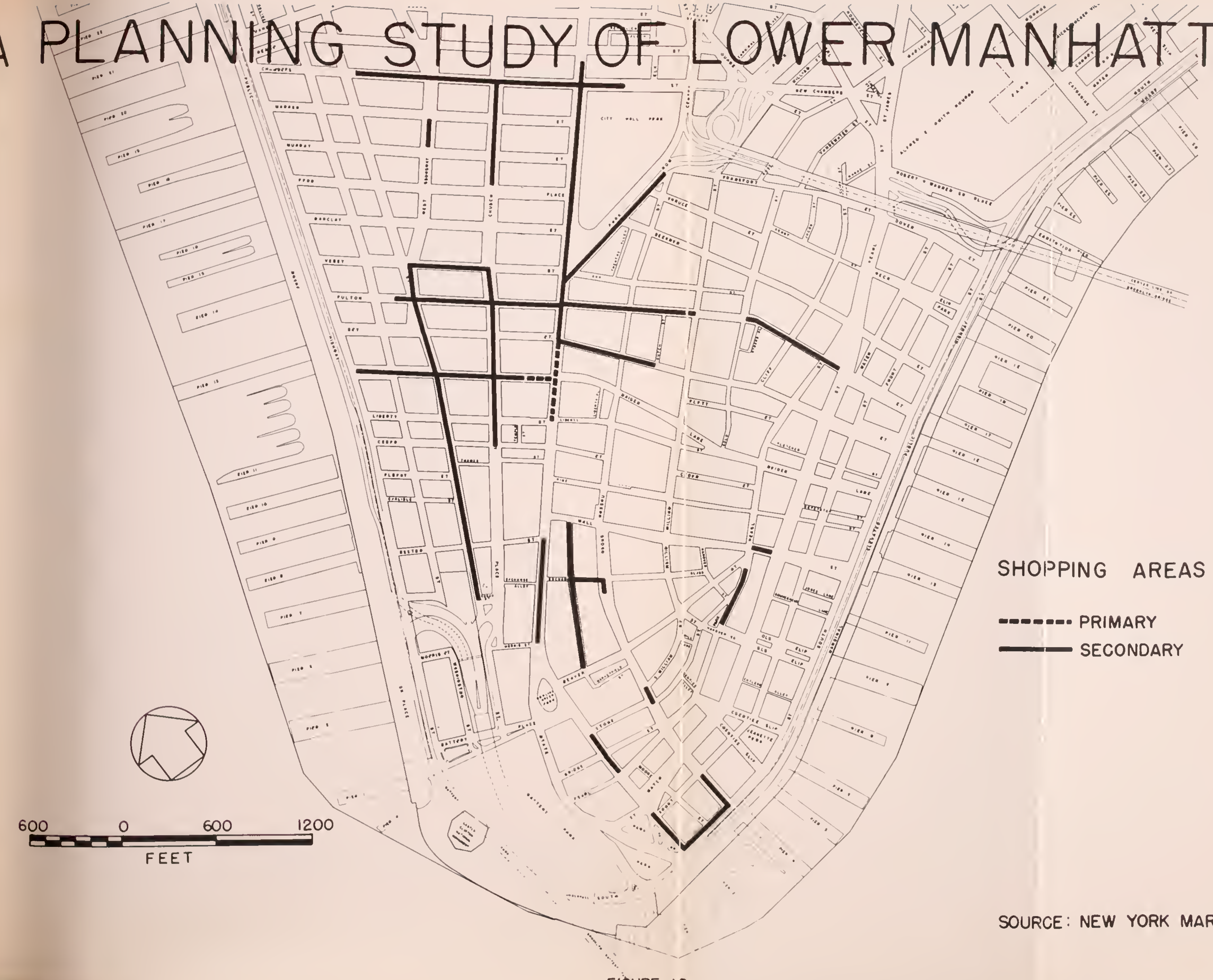
[115] New York Mirror, New York Times, and News Syndicate Company, New York Market Analysis Retail Trade, (New York: 1952) unpaged.

A PLANNING STUDY OF LOWER MANHATTAN



SOURCE: NEW YORK MARKET ANALYSIS

FIGURE 13

TABLE 9

A PLANNING STUDY OF LOWER MANHATTAN RETAIL STORES AND SALES

Group	Number of Stores	Percent of Area Total	Percent of Borough Total	Sales ($000)	Percent of Area Total	Percent of Borough Total
All	2,257	100.0	6.5	227,795	100.0	6.1
Food	138	6.1	0.4	X	X	X
Eating & Drinking Places	668	29.6	1.9	67,513	29.6	1.0
General Merchandise	15	0.7	0.4	X	X	X
Apparel	316	14.0	0.9	33,528	14.7	0.9
Furniture Appliances, etc.	107	4.7	0.3	23,895	10.5	0.6
Automotive	7	0.3	.02	1,508	0.7	.04
Gasoline Stations	23	1.0	.07	1,192	0.5	.03
Lumber and Hardware	50	2.2	.15	5,253	2.3	.14
Drug and Proprietary	45	2.0	.13	5,433	2.4	.14
Liquor	39	1.7	.11	5,144	2.3	.14
Other*	849	37.7	2.5	X	X	X

XWithheld to avoid disclosure

*Includes bicycle, book, photographic, cigar, florist, fuel, gift, novelty, souvenir, garden supply, jewelry, luggage and leather goods, music, newsdealer, office equipment, optical goods, second hand, sport, stationary stores.

Source: New York Market Analysis: 1952
Business Classification Based on United States Census of Business - 1948.

CHAPTER VI

Office Buildings and Non-Residential Floor Space

While Lower Manhattan is characterized by a wide diversity of economic activity, its major physical characteristic, which in large measure has become a symbol of New York, is the soaring spires of its office buildings crowding the tip of the island.

Lower Manhattan is now one of two dominant business centers - the other being the midtown section - but prior to construction of Pennsylvania and Grand Central Terminals in 1910 and 1913 respectively, it was unquestionably the commercial center of the United States. The linkages between the port function and railroad and shipping company offices; between stock, produce, commodity exchanges, and banking and related financial activities; between insurance firms and financial institutions; between all of these activities and governmental offices and agencies were such as to concentrate within the area south of Chambers Street (where were provided the principal transit and terminal facilities of the city) a tremendous complex of business activity.

The development of the Pennsylvania and Grand Central Terminals with the resultant movement of population to suburban communities resulted in a demand for office space in the midtown area. Lower Manhattans' preeminence and its presumptive inviolability to competition were such that property owners did little or nothing toward improving the general conditions prevailing in the area.

Table 10 on page 76 shows the increase in competitive office building space for two principal building periods in Manhattan. In the boom

TABLE 10

A PLANNING STUDY OF LOWER MANHATTAN INCREASE IN COMPETITIVE OFFICE BUILDING SPACE FOR TWO PRINCIPAL BUILDING PERIODS IN MANHATTAN

District	Boom Period (1925-1933) Increase in Thousands of Square Feet	Boom Period (1925-1933) % of Total Increase	Post-War Period (1947-1954) Increase in Thousands of Square Feet	Post-War Period (1947-1954) % of Total Increase
All	32,092	100.0	7,474	100.0
Financial	8,382	26.1	-	-
Insurance	1,764	5.5	142	1.9
City Hall	1,796	5.6	488	6.5
Grand Central	11,974	37.3	3,809	51.0
Plaza	5,622	17.5	2,330	31.2
Times Square	1,796	5.6	291	3.9
Columbus Circle	756	2.4	414	5.5

Source: Real Estate Board of New York

period of 1925 - 1933 the Lower Manhattan area including the Financial, Insurance and City Hall districts as defined by the Real Estate Board of New York, experienced approximately the same increase in thousands of square feet of office space as did the Grand Central District. Nevertheless, while the development south of Chambers Street was limited almost exclusively to skyscrapers, midtown complemented and consequently strengthened the competitive position of its office buildings through the construction of such necessary amenities as garages, hotels, theatres and the like.

The stock market crash in 1929 followed by the construction of Rockefeller Center in the early thirties and its drawing of many key firms from south of Chambers Street vividly illuminated the vulnerability of Lower Manhattan's competitive position.

While all districts were hard hit by the depression, analysis of above grade office vacancies in Manhattan as given in Tables 11 and 12 clearly indicates the greater resiliency of the midtown area.

The tremendous demand for office space after the war resulted in almost 100 per cent occupancy in all districts and sparked a tremendous wave of new office construction. In the period 1947-1954 the vast bulk of new office building construction was concentrated in the Grand Central and Plaza districts, with no new construction at all reported for the Financial District and with only minimal increases in the Insurance and City Hall districts.

Since the end of the war the midtown area has had 41 major office buildings constructed, with another 35 in various stages of construction or planning. An estimated total of approximately 29 million square feet will

A PLANNING STUDY OF LOWER MANHATTAN
ABOVE GRADE OFFICE VACANCIES IN MANHATTAN BY VACANCY PERCENTAGE

1925 - 1940

District and Date Established	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940
All	6.0	3.4	4.6	7.4	5.0	8.9	16.4	20.3	24.2	25.2	25.1	22.0	18.5	17.7	17.6	17.0
Financial* - 1925	5.0	3.2	4.4	5.9	1.2	4.4	13.1	17.9	21.7	21.4	21.7	20.4	17.0	18.6	19.5	18.1
Grand Central - 1925	8.1	3.8	4.9	9.8	8.5	12.0	17.3	21.9	25.3	29.1	27.8	24.9	21.0	19.9	18.9	18.1
Plaza - 1929					7.9	24.7	42.3	45.1	39.4	34.3	37.2	23.4	17.2	12.3	9.8	12.8
City Hall* - 1929					4.1	11.2	13.2	16.9	23.1	21.4	24.7	21.8	20.0	18.9	17.7	15.6
Insurance - 1930					-	3.0	14.9	16.7	23.8	23.8	22.6	21.1	18.3	16.2	16.7	15.8
Times Square - 1933					-	-	-	-	28.0	21.3	17.5	13.5	12.7	9.9	11.3	11.3
Columbus Circle - 1929					14.0	8.2	12.8	19.3	22.4	26.7	25.4	26.9	23.5	23.7	21.0	28.0

*City Hall separated from Financial as of 5/1/29

ABOVE GRADE OFFICE VACANCIES IN MANHATTAN BY VACANCY PERCENTAGE

1941 - 1956

District	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956
All	15.2	12.9	10.7	7.7	1.8	0.2	0.2	0.3	0.7	2.0	1.1	0.7	0.9	1.8	1.2	1.4
Financial	16.0	15.0	11.8	9.8	3.1	0.4	0.2	0.6	1.3	3.2	2.2	1.0	1.0	2.0	1.7	0.7
Grand Central	16.6	12.9	10.1	6.6	0.8	0.0	0.0	0.0	0.2	1.6	0.3	0.6	0.6	1.6	0.7	0.5
Plaza	9.5	6.5	6.6	3.0	0.0	0.0	0.0	0.1	0.0	1.1	0.6	0.2	0.4	1.5	0.6	0.1
City Hall	16.5	14.2	12.9	9.3	2.2	0.1	1.7	0.4	1.2	2.4	1.7	1.0	1.6	2.4	3.3	5.5
Insurance	13.7	11.7	11.0	8.7	4.5	0.2	0.0	0.1	0.0	0.3	0.3	0.8	0.9	1.0	0.6	0.8
Times Square	10.1	8.9	7.8	5.2	0.4	0.0	0.0	0.2	0.9	0.5	0.9	0.4	0.9	1.8	1.6	1.3
Columbus Circle	19.3	17.7	17.2	9.3	0.0	0.0	0.0	0.1	0.7	2.3	0.4	0.3	0.6	0.6	1.3	14.0

Source: Real Estate Board of New York

be provided by these 76 structures. This supply of space is designed to meet demand; by firms entering New York City and seeking headquarters: by firms needing room for expansion; and by firms moving uptown.

In comparison, the downtown demand for space is attributable entirely to firms already in the area but requiring additional space for expanding activities. This demand is being met by the construction or planning of new buildings as indicated in Table 13 which gives data for office buildings completed, under construction or planned in 1957.

Recent additions to downtown congestion further aggravate the very conditions contributing to urban dispersal. Traffic movement is slowed, street crowding is worsened, parking becomes almost impossible, and all the frictions involved in city life and business are further intensified.[116]

The location of major post-war construction in the study area is given in Figure 14. With few exceptions, the mistakes of the past in erecting structures of excessive bulk and height are perpetuated.

In any discussion of recent office building construction, mention must be made of one of the few divergences in the Lower Manhattan area from the traditional tower or wedding cake structure covering almost the entire site. The current exception to poor site planning and poorer architecture promises to be the Chase Manhattan Bank building now being erected in a two and one-half acre site bounded by Liberty, William, Pine, and Nassau Streets.

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[116] Miles Colean, Renewing Our Cities, (New York: The Twentieth Century Fund, 1953). p. 23.

TABLE 13

A PLANNING STUDY OF LOWER MANHATTAN OFFICE BUILDINGS COMPLETED, UNDER CONSTRUCTION OR PLANNED

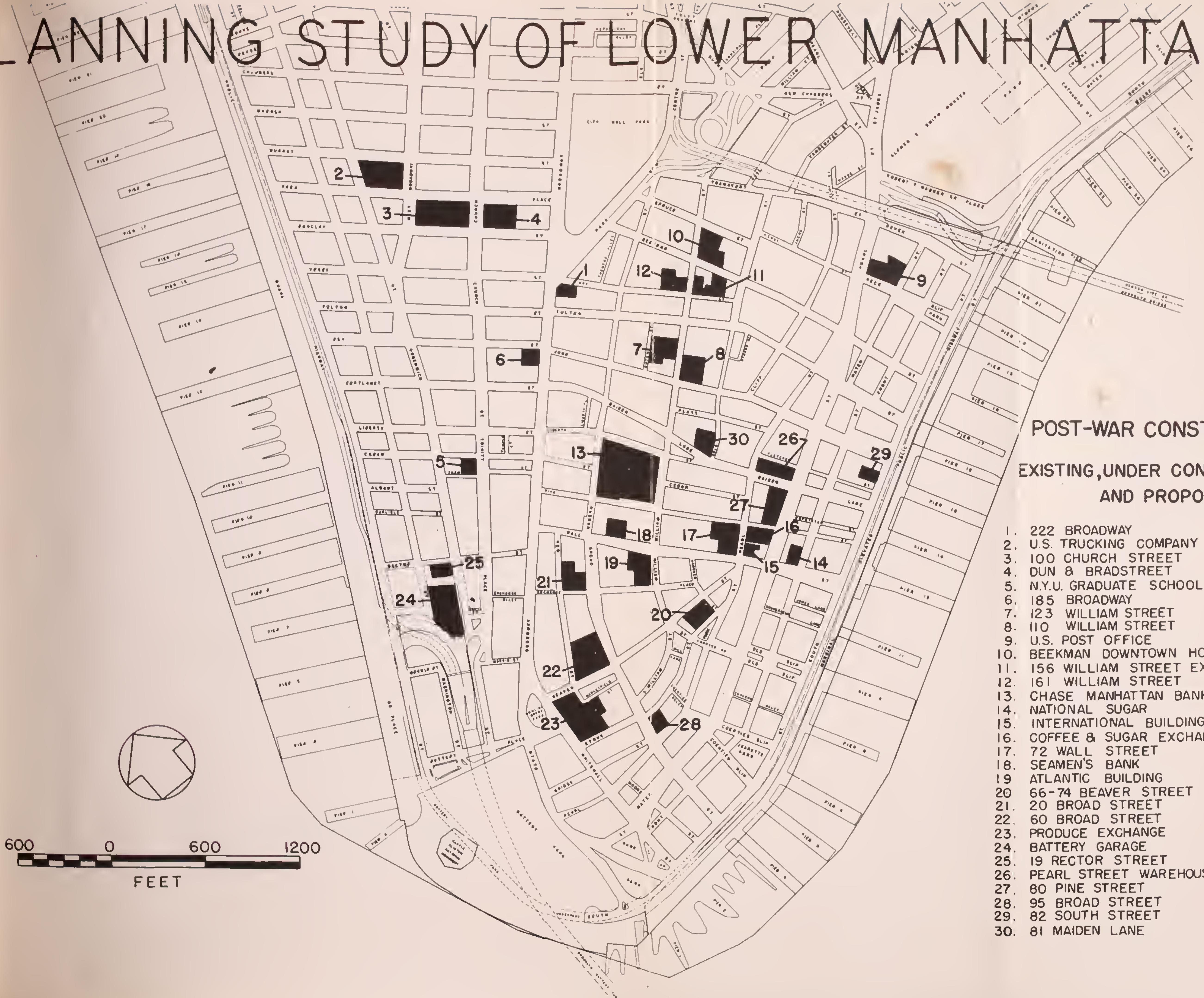
1957

Location and Name		Status	Number of Stories	Rentable Area in Sq. Ft.
20 Broad St.	--	Completed	27	415,000
79 Pine St.	Coffee & Sugar Exch.	Completed	12	107,000
19 Rector St.	--	Completed	11	57,000
72 Wall St.	--	Completed	15	105,000
123 William St.	--	Completed	26	410,000
156 William St.	Annex	Completed	7	40,000
	Total Completed: 6 Buildings			1,134,000
81 Maiden Lane	--	Under Const.	13	140,000
100 Church St.	--	Under Const.	20	900,000
110 William St.	--	Under Const.	31	682,000
45 Wall St.	Atlantic	Under Const.	27	375,000
2 Broadway	Produce Exchange	Under Const.	30	1,300,000
28 Nassau St.	Chase-Manhattan	Under Const.	60	1,700,000
	Total Under Construction: 6 Buildings			5,097,000
80 Pine St.	--	Planned	13	210,000
91 Broad St.	--	Planned	n.a.	n.a.
113 Maiden Lane	--	Planned	n.a.	n.a.
66 Beaver St.	--	Planned	n.a.	n.a.
222 Broadway	Western Electric	Planned	n.a.	n.a.
185 Broadway	--	Planned	22	140,000
268 West Broadway	--	Planned	5	45,000
	Total Known Planned: 7 Buildings			

n.a. Not available

Source: New York Times
Real Estate Board of New York

PLANNING STUDY OF LOWER MANHATTAN



POST-WAR CONSTRUCTION

EXISTING, UNDER CONSTRUCTION, AND PROPOSED

1. 222 BROADWAY
2. U.S. TRUCKING COMPANY GARAGE
3. 100 CHURCH STREET
4. DUN & BRADSTREET
5. N.Y.U. GRADUATE SCHOOL OF BUSINESS
6. 185 BROADWAY
7. 123 WILLIAM STREET
8. 110 WILLIAM STREET
9. U.S. POST OFFICE
10. BEEKMAN DOWNTOWN HOSPITAL
11. 156 WILLIAM STREET EXTENSION
12. 161 WILLIAM STREET
13. CHASE MANHATTAN BANK
14. NATIONAL SUGAR
15. INTERNATIONAL BUILDING
16. COFFEE & SUGAR EXCHANGE
17. 72 WALL STREET
18. SEAMEN'S BANK
19 ATLANTIC BUILDING
20 66-74 BEAVER STREET
21. 20 BROAD STREET
22. 60 BROAD STREET
23. PRODUCE EXCHANGE
24. BATTERY GARAGE
25. 19 RECTOR STREET
26. PEARL STREET WAREHOUSE
27. 80 PINE STREET
28. 95 BROAD STREET
29. 82 SOUTH STREET
30. 81 MAIDEN LANE

FIGURE 14

The distinctive feature of this project is an open plaza covering approximately 70% of the site, with the public banking floor located at street level on one side. A cafeteria and recreational facilities will be provided below the main banking floor, and two additional floors will be provided below this level. Above, on approximately 30% of the total site, and occupying an area roughly 280 feet by 100 feet will rise a 60 story, 810-foot structure without any set-backs.[117]

Figure 15 on page 84 shows a rendering of the Chase Manhattan Building and the site plan. Undoubtedly the creation of open space and the landscaping treatment will contribute much toward meeting a tragic lack of even such simple amenities in the study area.

Non-Residential Floor Space

Lower Manhattan's pre-eminence as an office center tends to obscure its many other diverse activities. Table 14 on page 86 gives a 10 category breakdown of non-residential floor space for the entire Manhattan Central Business District, and for the study area south of Chambers Street. Approximately 70% of the gross non-residential floor space of 63.5 million square feet in the study area is devoted to office functions, as compared to almost 40% for the entire Central Business District with a total of 447.8 million square feet of gross non-residential floor space. On the other hand, the principal use in terms of the amount of gross non-residential floor space is devoted to lofts in the Central Business District,

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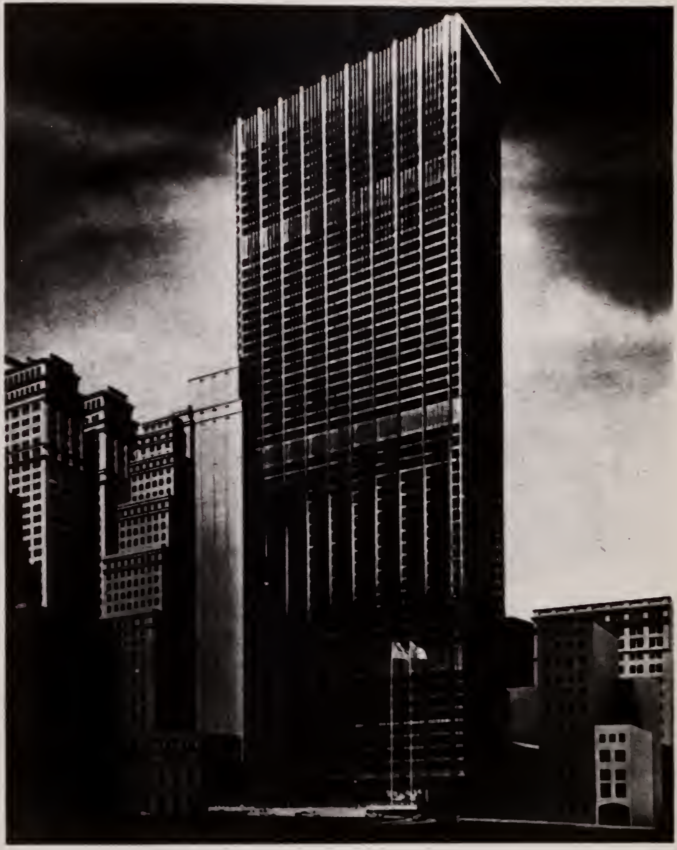
[117] Samuel R. Mozes, The Chase Manhattan Project, The International Monthly Journal for Prefabrication and New Building Techniques, (London, Volume 3, Number 31, May 1956).

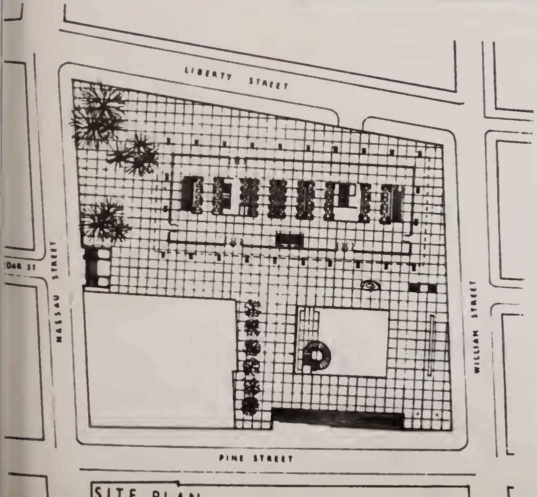
CHASE MANHATTAN PROJECT

Architects

Skidmore, Owings & Merrill



Detailed model of the project



SITE PLAN

FIGURE 15

while in the study area loft space ranks second to office space.

Estimated employment in the study area is approximately 20% of that in the Central Business District, while the study area has only about 15% of the total gross non-residential floor space in the Central Business District.

While all listed non-residential uses in the Central Business District exist in varying degrees in the study area, the amount devoted to such uses as stores, garages, hotels, and theatres is of particular interest in high-lighting the presence of many amenities in the Central Business District that are almost non-existent in the study area.

TABLE 14

A PLANNING STUDY OF LOWER MANHATTAN
GROSS NON-RESIDENTIAL FLOOR SPACE[1]

1956-1957

Building Classification	Central Business District	Study Area - South of Chambers
	(in millions of square feet)	
Loft	174.5	11.8
Office	133.6	46.3
Hotel	29.9	.4
Factory & Industrial	21.1	.6
Warehouse	17.9	.3
Store	15.0	.5
Garages & Gas Stations	13.5	.2
Stores in Residential Structures	8.9	(a)
Theatres	4.3	(a)
Miscellaneous & Utility Structures	29.1	3.4
Total	447.8	63.5
Estimated Employment in Thousands	2,150	407

a) Less than 100,000 square feet.

[1] Excludes exempt property.

Source: New York City Tax Department
New York City Department of City Planning

CHAPTER VII

Assessed Valuations

The physical growth of a city and changes in its land values are closely related.[118] Fluctuations in values in the Central Business District are due to prevailing centrifugal and centralizing forces.[119] While the highest land value within the Central Business District is generally found in the middle of the retail shopping district,[120] in New York City the financial section has land more valuable than the shopping district.[121] A basic understanding of this factor is essential in the formulation of any planning proposals affecting land use.

In 1957 the area south of Chambers Street had a total assessed valuation of approximately 858 million dollars. 12% of this total or $101 million dollars was in tax exempt property. The present assessed values of land (excluding improvements) range from about half a million to fifteen million dollars per acre.

On the basis of the then tax rate of $3.99 per $100 of assessed valuation, the city had a income of real estate taxes from the area of about 30 million dollars.

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[118] Homer Hoyt, One Hundred Years of Land Values in Chicago (Chicago: University of Chicago Press, 1933), p. 5.

[119] Ibid., p. 336.

[120] Calvin F. Schmid, Social Saga of Two Cities (Minneapolis: Bureau of Social Research, The Minneapolis Council of Social Agencies, 1937), pp.53-55.

[121] Richard M. Hard, Principles of City Land Values 4th ed; (New York: The Record and Guide, 1924), p. 159.

Assessed valuations per square foot for land and for land and improvements were computed for each block in the study area. The results for all land in the study area including exempt property land are shown in Figures 16 and 17 on pages 89 and 90.

Two conclusions are immediately apparent from observation of this data: the first being that a very great variation in value exists - actually ranging from less than $10 per square foot at the periphery to peak values of $700 per square foot in the core of the area; and that the peripheral blocks on all sides of the core which are characterized by the lowest assessments are simultaneously the most susceptible to blight and change, and consequently the most likely blocks on which to focus renewal and redevelopment efforts.

Land values present a major problem in any renewal or redevelopment effort. Greer maintains that in downtown areas land prices often exceed the real income power of the property but that high valuations must be imposed by municipal governments in order to obtain the revenue to meet rocketing costs.[122] Similarly, Colean stresses that asking prices for property in older urban areas are generally higher than an investor is justified in paying for a contemplated new use.[123] This unrealistic attitude toward values is shared by real estate interests and the public at large.[124] The major factor in maintaining artificially high values is

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[122] Guy Greer, Your City Tomorrow (New York: Macmillan, 1947, pp. 142-143.

[123] Colean, op. cit., p. 78.

[124] Ibid., p. 78.

A PLANNING STUDY OF LOWER MANHATTAN

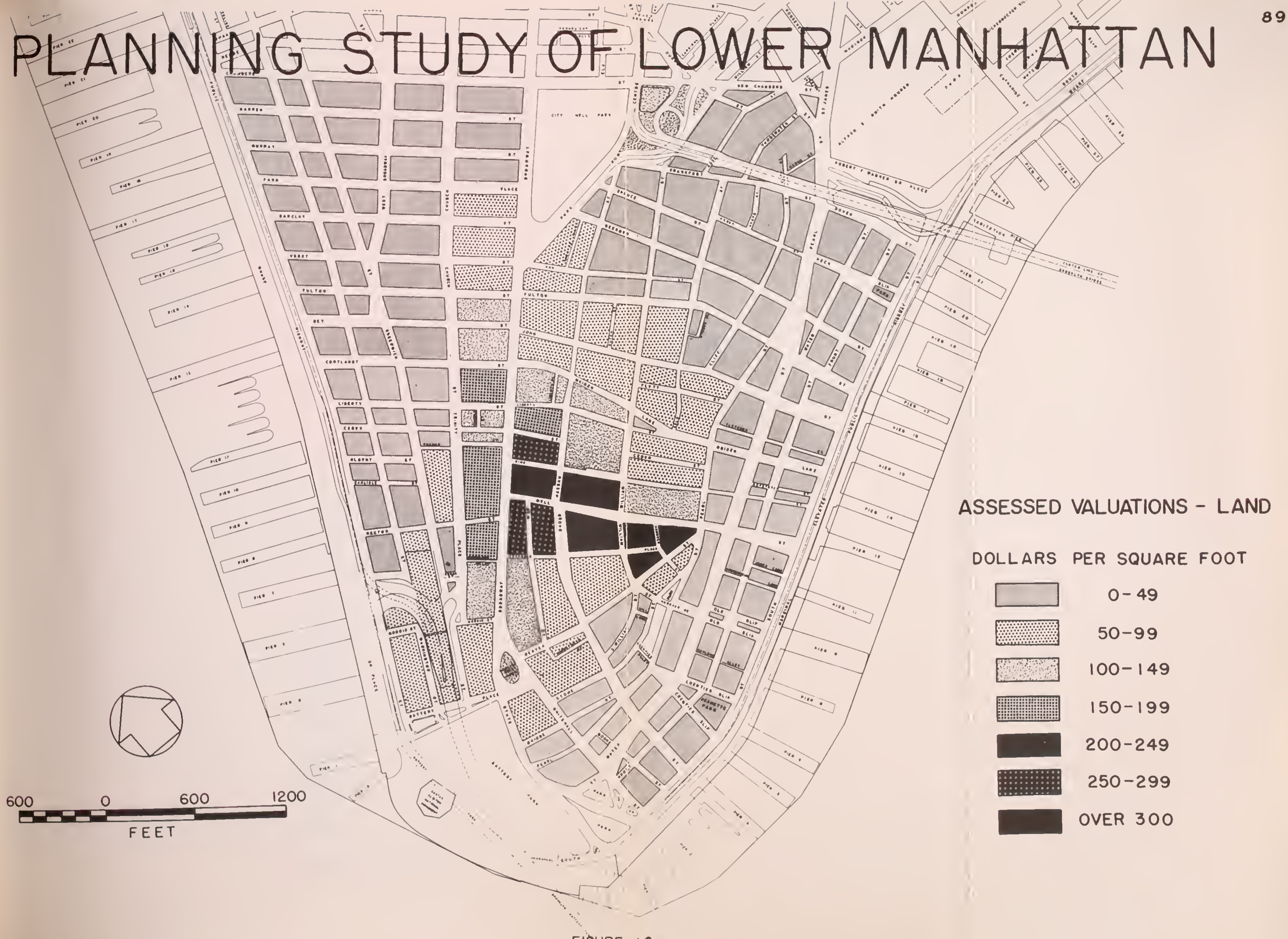

FIGURE 16

A PLANNING STUDY OF LOWER MANHATTAN

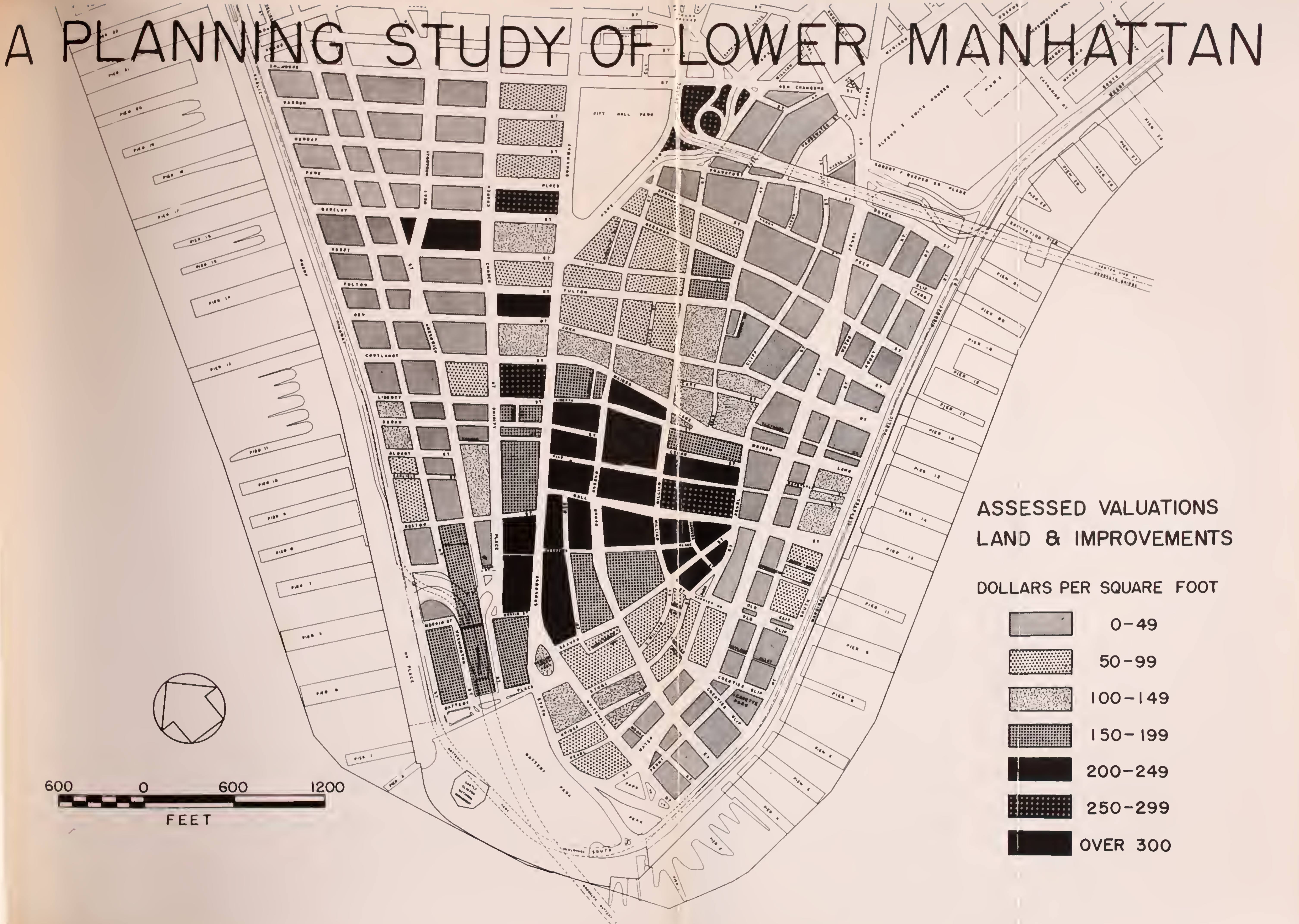

FIGURE 17

speculation, often on the part of absentee owners who are under no pressure to sell.[125]

A further prop to artificial values is exceedingly poor zoning which generally provides for excessive industrial, business and commercial uses.

No research has been undertaken in this study with respect to obtaining data on ownership of parcels. It may be assumed however, that the scattered, small ownerships particularly characteristic of older urban areas applies equally as well to the study area. If such be the case, then the problem of land assemblage becomes one of major importance together with that of cost.

Some indication of the problems of assemblage and cost may be derived from reviewing the elaborate brochures put out periodically by the Mayor's Committee on Slum Clearance in connection with Title I projects.

"Extensive study of the assemblage of substantial plots within the City during the recent past, leads to the conclusion that it is virtually impossible to assemble a site of this size...(400,000 square feet)..without resorting to condemnation. No doubt, it will be possible to acquire individual parcels within the site through purchase or option. Study of such purchases in recent acquisitions . . . . . indicates that such acquisitions are above the assessed valuations in virtually every instance."[126]

With respect to decisions in condemnation awards, "in no instance

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[125] See Leo Grebber, Housing Market Behavior in a Declining Area (New York: Columbia University Press, 1952). 3/5 of the total parcels and 3/4 of the value on the Lower East Side were held by corporations, institutions on estates in 1950.

[126] Committee on Slum Clearance, Seward Park Slum Clearance Plan (New York, 1956), p. 62.

(since 1947) have total awards for a site been lower than the assessed valuation."[127]

The conclusions resulting from these factors are fairly obvious. Any hope that private capital will invest in the redevelopment of the study area so as to provide new and more valuable facilities in accordance with a comprehensive plan must be preceded by the establishment of machinery to enable the city to assemble land through its powers of eminent domain and condemnation. Properly legislated and guided, such redevelopment can only result in an increase in tax revenues more than sufficient to offset costs incurred by the city in the redevelopment effort. The direct financial benefits and the indirect benefits of a better environment and a healthier economic component are compelling arguments for some form of effective Title I legislation governing non-residential redevelopment.[128]

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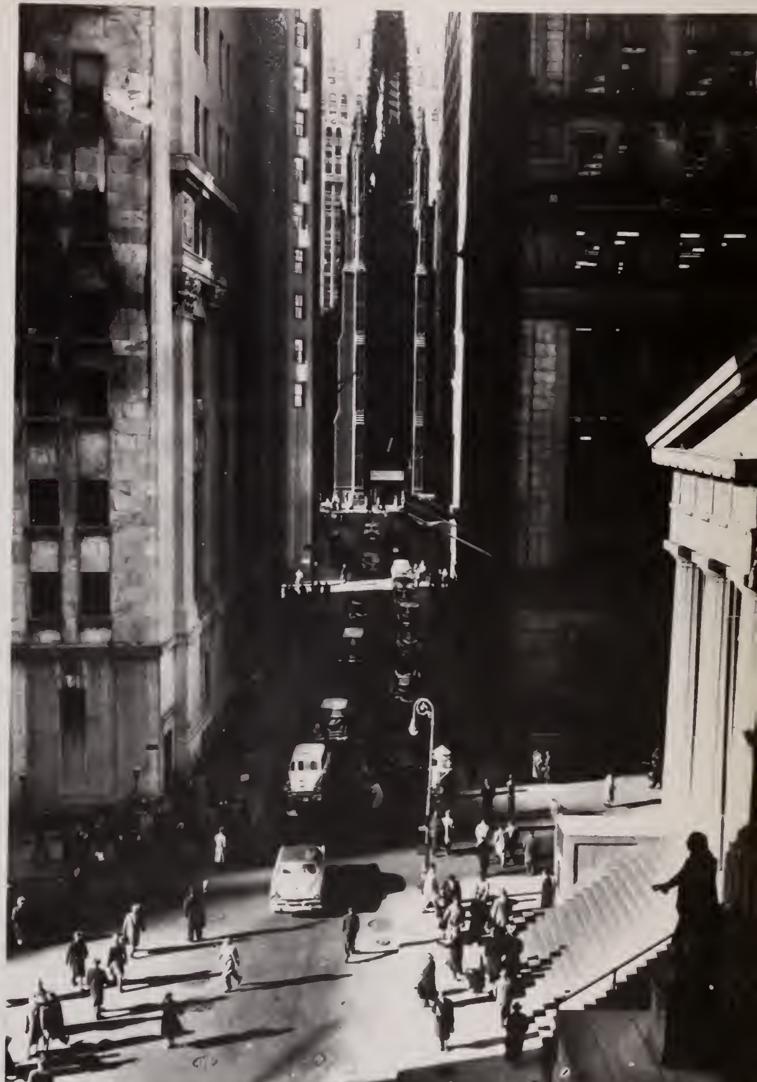
[127] Ibid., p. 63

[128] Three excellent and recent studies relating to the economics of redevelopment are: Lawrence Lackey, Redevelopment of Area "E", A Report to the San Francisco Planning Commission, June 1956, 48 pages; Real Estate Research Corporation and San Francisco Department of City Planning, Summary of Market Analysis - Redevelopment Area "E", May 1956, 24 pages; Bureau of Governmental Research, Does Redevelopment Pay Off? (Indianapolis: Chamber of Commerce, September 1955), 51 p.



Wall Street—the financial hub of the nation and the world

FIGURE 18

Port Authority

CHAPTER VIII

Traffic and Transit

"The economy of the City - as indeed of the entire metropolitan area depends in great measure on the expeditious, safe movement of people and goods."[129] The limitations on the full and free movement of traffic imposed by historical physical factors coupled with the dramatic increase in the use of the automobile, the decline in passenger volume and revenue experienced by the subways, and the alarming deterioration of commuter railroad service , constitute a single unified problem.[130]

An efficient circulation system is a major element of the city plan. The infinite variety of movements of people and goods take place through three major means of travel: (1) mass transit systems - subways, busses and railroads; (2) the private vehicle; and (3) walking.[131]

Lower Manhattan's preeminence as a commercial center has been due in large measure to the principal role played by transit and terminal facilities.

The importance of the rapid transit system in New York City can not be minimized. The vital link between residential areas and places of employment is the subway system. The gigantic job of transporting almost 1.5 million persons from home to work and home again is complicated by the fact that most of this travel is concentrated both within time and space.

The concentration of daytime population is considered to be the es-

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[129] Robert F. Wagner, Address to the City Council Upon Presentation of the Annual Report for 1957. p. 3.

[130] Ibid., p. 4.

[131] National Capital Park and Planning Commission, Moving People and Goods Monograph No. 5 (Washington, D.C., June 1950). p.6.

sential force which vitalizes the Central Business District and which gives meaning to the centralization of functions and the intensity of land use.[132,133] As reported by Weiss, a number of studies have demonstrated that almost 50% of all trips to the Central Business District were reported for purpose of work.[134]

Table 15 on page 96 gives a twenty-four hour passenger movement count for each of the twenty stations on the three divisions of the transit system serving the study area. Data for each of these stations, as plotted in Figure 19 on page 97, was compiled for a typical day - Wednesday, March 7, 1956.

Assuming that those leaving the area during the peak hours between 4 and 6 P.M. are essentially those employed in the area and who use the subways for the journey to work, a figure of approximately 190,000 is obtained. The balance of the 382,656 passengers represented as the total turnstile count must assumedly represent persons boarding the subways in the study area who arrive from points outside the area via other modes of transportation, and who have still other points outside the area as their destination. Intra-area trips may have some slight effect on the total involved.

Turnstile counts in New York City have severe limitations as a valid index of circulation. While they possess some utility, considerable refine-

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[132] The United States Bureau of the Census defines daytime population as representing for any given standard location at the selected hour "the sum of the number of persons physically present in the area working, attending school, shopping, conducting personal business, enroute, or engaging in other activities away from their homes, and the number of resident persons remaining at home in the location."

[133] Weiss, op cit., p. 12.

[134] Ibid., pages 13 - 15.

THE CITY OF NEW YORK – BOARD OF TRANSPORTATION
NEW YORK CITY TRANSIT SYSTEM

REVENUE AUDIT OFFICE

BORO. OF MANHATTAN - ALL STATIONS SOUTH OF CHAMBERS STREET
PASSENGER TRAFFIC BY HOURS – RAPID TRANSIT LINES, FOR DAY WEDNESDAY

DIVISION
LINE
DATE MARCH 7, 1956

STATION	BOOTH No.	12 Mid. to 1 A.M.	1 A.M. to 2 A.M.	2 A.M. to 3 A.M.	3 A.M. to 4 A.M.	4 A.M. to 5 A.M.	5 A.M. to 6 A.M.	6 A.M. to 7 A.M.	7 A.M. to 8 A.M.	8 A.M. to 9 A.M.	9 A.M. to 10 A.M.	10 A.M. to 11 A.M.	11 A.M. to 12 Noon	12 Noon to 1 P.M.	1 P.M. to 2 P.M.	2 P.M. to 3 P.M.	3 P.M. to 4 P.M.	4 P.M. to 5 P.M.	5 P.M. to 6 P.M.	6 P.M. to 7 P.M.	7 P.M. to 8 P.M.	8 P.M. to 9 P.M.	9 P.M. to 10 P.M.	10 P.M. to 11 P.M.	11 P.M. to 12 Mid.	
IRT																										
SEVENTH AVE. LINE																										
SOUTH FERRY		96	40	40	9	14	87	728	2363	2773	1344	676	464	238	197	546	550	761	1147	424	296	147	166	138	198	✓13,444
RECTOR ST		26	15	5	5	6	11	17	45	74	182	203	233	202	255	335	487	776	2547	664	210	117	131	31	40	6,622
CORTLANDT ST		46	28	21	10	13	18	127	458	1067	717	316	283	405	544	504	725	1087	2359	767	261	174	107	120	64	✓10,216
WALL & WILLIAM		156	135	77	57	21	35	45	86	136	222	413	674	442	951	1087	2650	6406	13,744	2732	1169	646	514	340	218	✓33,076
FULTON - WILLIAM		25	16	13	8	7	13	23	60	124	148	211	334	256	590	633	908	4216	6913	1360	542	314	114	87	31	✓16,931
PARK PLACE		37	34	9	8	5	4	4	17	50	70	130	223	180	176	538	224	627	1768	1033	333	210	191	159	42	✓6,017
CHAMBERS ST		141	61	63	31	29	40	130	283	850	602	578	732	457	623	548	1133	1883	3039	1676	183	[illegible]	157	232	94	✓13,816
LEXINGTON AVE LINE																										
BOWLING GREEN		168	30	25	26	16	28	151	434	655	281	426	614	387	534	787	1333	2408	8025	3594	407	346	318	192	229	✓21,919
WALL ST		195	94	56	18	13	37	45	183	268	382	563	823	1076	1060	2045	2344	7859	10,456	5187	1476	771	915	386	231	✓36,548
FULTON-JOHN STS		150	71	68	51	36	55	110	403	1223	756	437	504	721	568	955	1702	2817	8080	2765	754	340	258	238	128	✓23,240
BROOKLYN BRIDGE		113	33	23	17	14	30	106	290	575	472	748	811	966	904	1239	1425	3430	4897	1858	629	556	183	605	118	✓20,042
BMT																										
BROADWAY LINE																										
WHITEHALL ST		94	27	10	8	14	17	130	923	1500	746	345	304	396	407	653	835	1616	3781	586	386	253	37	82	128	✓13,408
RECTOR ST		110	54	24	17	33	27	24	101	61	141	171	168	178	228	327	421	2145	3288	1545	571	324	394	255	166	✓11,666
CORTLANDT ST		155	103	55	49	23	21	243	641	1281	1143	410	460	458	452	861	970	4150	4494	1571	645	304	263	272	166	✓19,303
CITY HALL		32	12	8	3	6	9	35	41	130	288	379	464	545	516	677	714	1563	3057	1141	480	186	170	261	49	✓10,791
NASSAU-CENTRE ST LINE																										
BROAD ST		153	121	100	95	110	97	111	117	173	140	167	201	322	356	427	1303	4025	12,413	3035	753	619	254	215	137	✓25,508
FULTON ST		138	103	87	63	61	64	95	30	166	250	281	372	451	480	662	1615	4022	9005	2230	584	602	249	261	196	✓22,203
CHAMBERS ST		67	45	42	34	38	52	79	467	257	332	328	533	518	428	337	967	3241	2480	581	227	142	200	206	119	✓12,842
IND.																										
EIGHTH AVE LINE																										
BROADWAY NASSAU ST		333	128	56	42	21	24	87	212	756	351	526	573	519	380	1155	1624	2281	8158	1576	477	1006	507	679	342	✓22,391
CHAMBERS ST		490	279	170	99	94	13	603	854	2413	1249	1102	1273	1232	1207	2153	2017	5007	13,057	3324	1251	1012	1013	742	316	✓40,443
																			124,713							382,656

÷ 2 =

191,328

PLANNING STUDY OF LOWER MANHATTAN

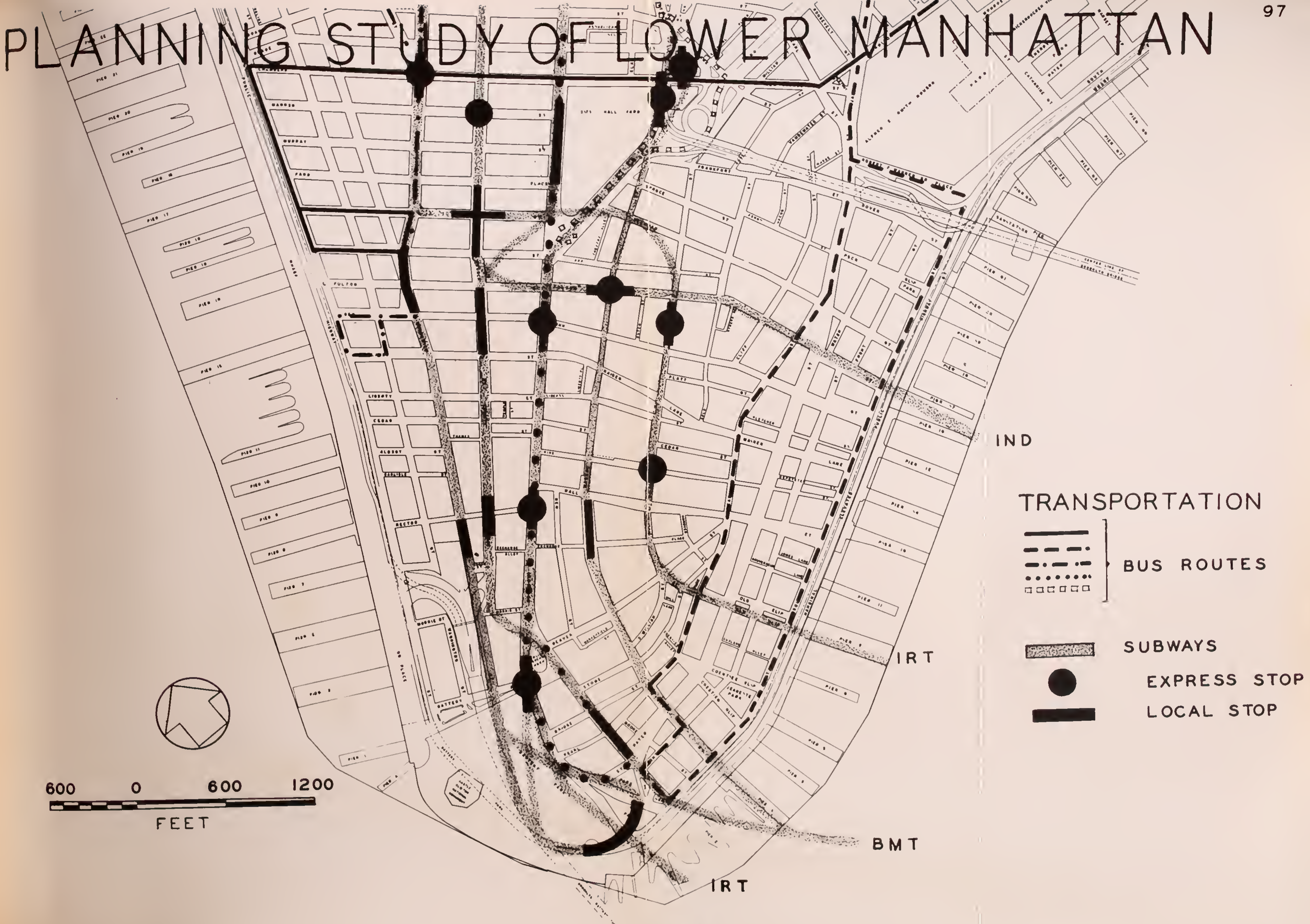

FIGURE 19

ment is necessary before they can be effectively relied upon to give meaningful origin, destination and volume data.

While it is unquestionably true that substantially more than 50% of the daytime population of the study area is related to work, this concentration represents a tremendous shopping potential, particularly in view of the established fact that up to one-third of the shopping in downtown areas is done by persons already there as a result of employment.[135]

Obviously any plans for the development of the study area should incorporate recommendations to tap and further develop this retail potential.

That existing transit facilities are taxed almost to the limit of capacity at critical points during peak hours is apparent from a review of a flow chart of the transit system as of June, 1954. This chart, accompanying the 1954 Annual Report[136], reveals that for morning peak hour service in Manhattan, south of 60th Street, the downtown Seventh Avenue Express with a maximum capacity of 31 trains comprised of 310 cars per hour provides exactly that amount of trains and cars per hour. Similarly, the Lexington Avenue Express on both uptown and downtown service provides maximum service equal to maximum capacity. Other lines fare only slightly better.

However, serious doubt exists in the minds of such authorities as Vernon,[137] Owen,[138] Harwood,[139] and others as to the efficacy of placing all our

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[135] Ibid., p. 14.

[136] New York City Transit Authority, Annual Report - 1954 (New York: 1954).

[137] Raymond Vernon, "Production and Distribution in the Large Metropolis" The Annals of the American Academy, Vol. 314 (November 1957), pages 15-29.

[138] Wilfred Owen, "Transportation" Ibid., pages 30 - 38.

[139] Edgar M. Harwood, Center City Goods Movement - An Aspect of Congestion (Washington, D.C.: Highway Research Board, January 1958), mimeo. 56 pages.

reliance on solving the circulation problem through improving the transit system.

"The history of subway building in New York has been one of breathless effort to keep up with demand. Every extension created new points of public and business concentration and additional strains on the systems. Each new line included the dispersion of population and intensification of downtown activity, because little effort was made to restrict land use in relation to the capacity of the systems. Something more than an expansion of facilities was plainly needed."[140]

Yet such improvements must be given priority because the subways represent the most significant mode of transportation making Lower Manhattan accessible to its necessary labor supply.

While the automobile has been deified elsewhere in the city through the seemingly inordinate construction of highways and other facilities, it remains a negligible mode of transportation for the study area. South of Chambers Street, 61 parking lots and 19 garages provide 3,169 and 3,380 spaces respectively. Assuming 1.7 riders per car for urban traffic, some 11,000 persons travel to the area by car, presumably for work. An unestimated number are dropped off by cars passing through or by the study area but with other destinations.

Data from the Department of Traffic giving traffic counts for locations within the study area is given in Table 16 on page 100. No significant generalizations can be made from analysis of the incomplete and inconclusive figures for selected days other than that there is an appreciable volume

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[140] Colean, op cit., p. 116.

T R A F F I C   C O U N T S

Check Point	Date	A.M. 7-10		P.M. 4-7		Peak Hour N. & S.						24 Hour Total	
		N.	S.	N.	S.		N.		S.	Highest Total		N.	S.
B'way: Warren & Chambers	Tuesday 2-27-51	943	1,000	886	1,198	10-11	431	2-3	497	2-3	885	4,959	6,020
West B'way: Chambers	Friday 5-4-51	253	515	212	433	9-10	446	9-10	562	9-10	1,008	4,659	7,390
W. B'way: Chambers & Warren	Wednesday 6-15-55	799	948	698	836	4-5	317	10-11	462	11-12	747	3,899	5,443
Broad St: Exchange Place	Wed.&Thur. 3-23 - 3-24-55	1,029	301	987	560	10-11	481	2-3	283	10-11	752	4,826	2,567
Park Row: Williams	Tuesday 3-3-54	4,590	-	3,289	-	7-8	1,752		-		-	18,382	-
West Side H'way Ramp to Tunnel	Friday 7-15-55	-	1,074	-	3,412			5-6	1,315		-	-	11,763
West Side H'way S. of Carlisle	Friday 7-15-55	4,773	1,599	4,188	1,040	8-9	1,672	8-9	669	8-9	2,341	23,214	6,370
Brooklyn Bridge - Man. Approach	Thursday 11-17-55	E 5,458	W 5,966	E 9,292	W 2,780	6-7	E 3,373	7-8	W 2,406	7-8	4,479	E 35,725	W 18,239
Brooklyn Battery Tunnel	Friday 11-19-54											To B'klyn 17,854	To Man 27,540

Source: Department of Traffic

of traffic within the area.

The Staten Island Ferry accounts for approximately 10,000 persons, many of whom take the subway in the study area to points outside. An estimated 50,000 persons travel to work in the area by bus and taxicab, and approximately 35,000 are accounted for by the commuter lines and related ferries from New Jersey. An unestimated fortunate few are able to walk from the residential neighborhoods on the Lower East Side.

Whatever the means of transportation in the area, the one characteristic common to them all is congestion - considered to be the price paid by both private and public segments of the economy for the advantages of concentration.

There is no question that the daily journey between home and work, more frequently than not, has nightmarish qualities. Overcrowding, standing for long distances, slow movement, and interminable delays affecting mass transit are only slightly worse than the ills characterizing other modes of transportation.

Probably the major difficulty in a complete assessment of the circulation problem besetting the Central Business District lies in the almost complete absence of useful data on the complex problems of mass transportation of people and goods, and on automobile and truck transportation. Unfortunately, there is still no widespread recognition that the problem of transportation is one in which the interrelationship of all modes is indivisible, and that consequently, only a comprehensive and coordinated plan can have any significance or any appreciable measure of success. The babel of sound and fury on the subject still drowns out such voices in the wilderness as

Mitchell and Rapkin,[141] Owen[142] and the New York and New Jersey Metropolitan Rapid Transit Commission.[143]

The magnitude and complexity of congestion in downtown districts, and the pressing need for some immediate and effective solutions, are generally accepted by all sources. Where the sharp cleavage of opinions occurs is in the means to the desired end. The Urban Traffic Forum in recognizing that "traffic relief is just one facet in the much bigger problem of urban development and redevelopment", stressed that any traffic solution to be more than merely palliative must be integrated into a comprehensive city plan.[144] The essential components of such a comprehensive plan include effective controls on central business district density, and the constructive decentralization of various types of activity.

The significant relationship between land use and planning and traffic generation, and the juxtaposition of divergent land uses to reduce travel instead of the total separation of land uses is presented by Owen as the planning aspects of the solution to the transportation problem.[145] Only within the framework of metropolitan regional planning can an effective and comprehensive solution be found for the numerous and complex interrelated

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[141] Robert Mitchell and Chester Rapkin, Urban Traffic (New York: Columbia University Press, 1955)

[142] Wilfred Owen, The Metropolitan Transportation Problem (Washington, D.C.: The Brookings Institute, 1956) 301 pages.

[143] Metropolitan Rapid Transit Commission, Joint Report (New York: March 1954) 102 pages.

[144] "Urban Traffic Forum" Architectural Forum February 1953. Reprint, 8 pages.

[145] Owen, op. cit., The Metropolitan Transportation Problem.

problems of highway, transit and railroad transportation.[146]

While greater and greater credance is being given the functional relationship between land use and traffic movement, the creation of precise and adequate analytical tools is needed to replace the traditional methods of quantifying traffic movement and then relying almost solely on palliative measures. Further research along the lines indicated by Mitchell and Rapkin in their exploratory study of the functional relationship between land use and the movement of people, goods and vehicles is clearly indicated.[147]

Some level of congestion is necessary to sustain the concentration and centralization essential to the existence of the downtown establishments.[148] It is becoming increasingly apparent from analytical studies of downtown business areas that the transportation connection of greatest importance between establishments in the highly concentrated central core is foot linkage. Other modes of transportation are useful only in trips between the core and other functionally differentiated land use areas.[149]

Increasing recognition is being given the concept that pedestrian movement in the core should be the least compromised. This awareness has given rise to two major approaches to the problem of downtown congestion, approaches varying essentially only in degree. The one approach reported as having been proposed in Baltimore would completely ban cars from downtown streets as the only way to prevent complete strangulation of the central area of the city.[150]

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[146] Ibid.

[147] Mitchell and Rapkin, op cit.

[148] Harwood, op cit., p. 3.

[149] Ibid., p. 4.

[150] Cecil Morgan, Ideas for a Better City Municipal Technical Advisory Service (Nashville: University of Tennessee, August 1956) p. 6.

The second approach, while banning cars in limited areas through the creation of pedestrian islands, emphasizes the distinction between the main (and conflicting) kinds of traffic, and consequently the vital necessity for their separation.

Numerous and varied proposals have long been advanced in terms of separating pedestrian and vehicular traffic, among them being arcaded sidewalks along existing streets, pedestrian arcades in the middle of long blocks, elevated and sub-surface pedestrian ways, sub-surface crosstown passenger transportation systems, pedestrian islands, moving rubber belt sidewalks, and the construction of cantilever sidewalks at second floor levels.[151]

While deep-rooted, persistent and widely held values would interdict a solution as radical as that proposed in Baltimore, acceptance of the pedestrian island and the separation of pedestrian and vehicular traffic is fairly widespread in limited scope, the most common examples being the superblock and the planned shopping center.

"Ideas for pedestrian-way business districts have spread from Fort Worth to Baltimore, Buffalo, Cincinnati, Muskegon, Philadelphia, and Sacramento, among other places."[152] This movement indicates that the concepts of the role of the Central Business District are undergoing drastic revision in meeting new demands for downtown services and facilities on the part of a growing working force, increased levels of income, and a changing composi-

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[151] Regional Plan Association, Traffic and Parking Study - A Plan for Improvement of Conditions in the Central Business District of New York City (New York: Regional Plan Association, 1942) 166 pages.

[152] Arthur D. McVoy, "Pedestrian-Way Business Districts" The American City LXXII, March 1957, pages 136 - 138, 171 - 178.

tion of the urban population.[153]

Other techniques for effectively reducing traffic congestion have been advocated by other authorities. Breines and Dean,[154] and Harwood[155] strongly recommend goods consolidation as one of the most effective means of reducing central business district congestion by minimizing the number of vehicles engaged in goods movement. Harwood also stresses that it may be as logical to legislate in the area of building management as it affects the use of loading spaces, as to legislate against the trucking industry concerning delivery hours or restrictions on vehicle movements. Through provisions in the lease, the number of vehicles arriving at a building and their length of stay can be effectively reduced, and a system of internal delivery established.[156] In terms of the function of the core, vehicles engaged in goods movement or tenant or building services should be given priority over non-commercial vehicles engaged in persons movement.[157] Parking garages, bus depots, post offices and drive-in establishments should be either restricted from the core or permitted only at peripheral locations in the core.[158]

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[153] Weiss, op. cit., p. 36.

[154] See Simon Breines and John P. Dean, City People on the Move: A Policy of Guided Urban Growth (New York: Unpublished Draft, 1954) A comprehensive and conceptual approach to the idea of pedestrian islands and goods consolidation.

[155] Harwood, op. cit., p. 31.

[156] Ibid., p. 28.

[157] Ibid., p. 50.

[158] Ibid., p. 50.

Still other proposals include the staggering of work hours to reduce peak congestion; the modernization of the existing subway system with newer and faster cars and longer trains; the rebuilding of existing stations with new and improved lighting, ventilation, entrances and exits; the construction of additional rapid transit facilities such as the proposed Second Avenue Subway and the New Jersey Loop; and the increased use of air travel.

The application of almost any of these various techniques to the study area would appear to have decided beneficial consequences. Certainly a wide range of these techniques are necessarily vital to any effective, comprehensive and long-range treatment of the deep-rooted, complex, and little undestood circulation ills of the study area.

CHAPTER IX

Waterfront

"At the core of the City's economic strength - the basis of its position as the center of world trade - is its prominence as a port."[159]

Some measure of the importance of the port can be derived from the estimate that at least one out of every ten persons gainfully employed in the port district earns his living directly or indirectly through operations of the port.[160] Annual port generated income is approximately six billion dollars.[161]

Prior to about 1860, the East River from the Battery north to approximately Corlears Hook (at the foot of Grand Street) constituted the principal center of the Ports' shipping activities.[162] Because swifter tidal currents kept the East River freer of floating ice, ship owners and masters preferred the East to the Hudson River. Around 1870, a long range pier improvement program was undertaken on the Hudson River waterfront. The development of longer steamships requiring longer pier berths and greater stream width for manueverability led to the gradual ascendency of the Hudson River pier development, and its inevitable movement northward.[163]

The transfer of major pier activity from the East River to the up-

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[159] Wagner, op. cit., p. 3.

[160] Donald V. Lowe, "World's Greatest Port Looks Ahead" The Westsider Vol. 20, No. 3, Winter 1955. p. 20.

[161] Port of New York Authority, The Port and the Community (New York: The Port of New York Authority, 1956), p. 3.

[162] Vincent A. G. O'Connor, "Terminus of the Seven Seas" The Westsider Vol. 22, No. 3, Winter 1957. p. 46.

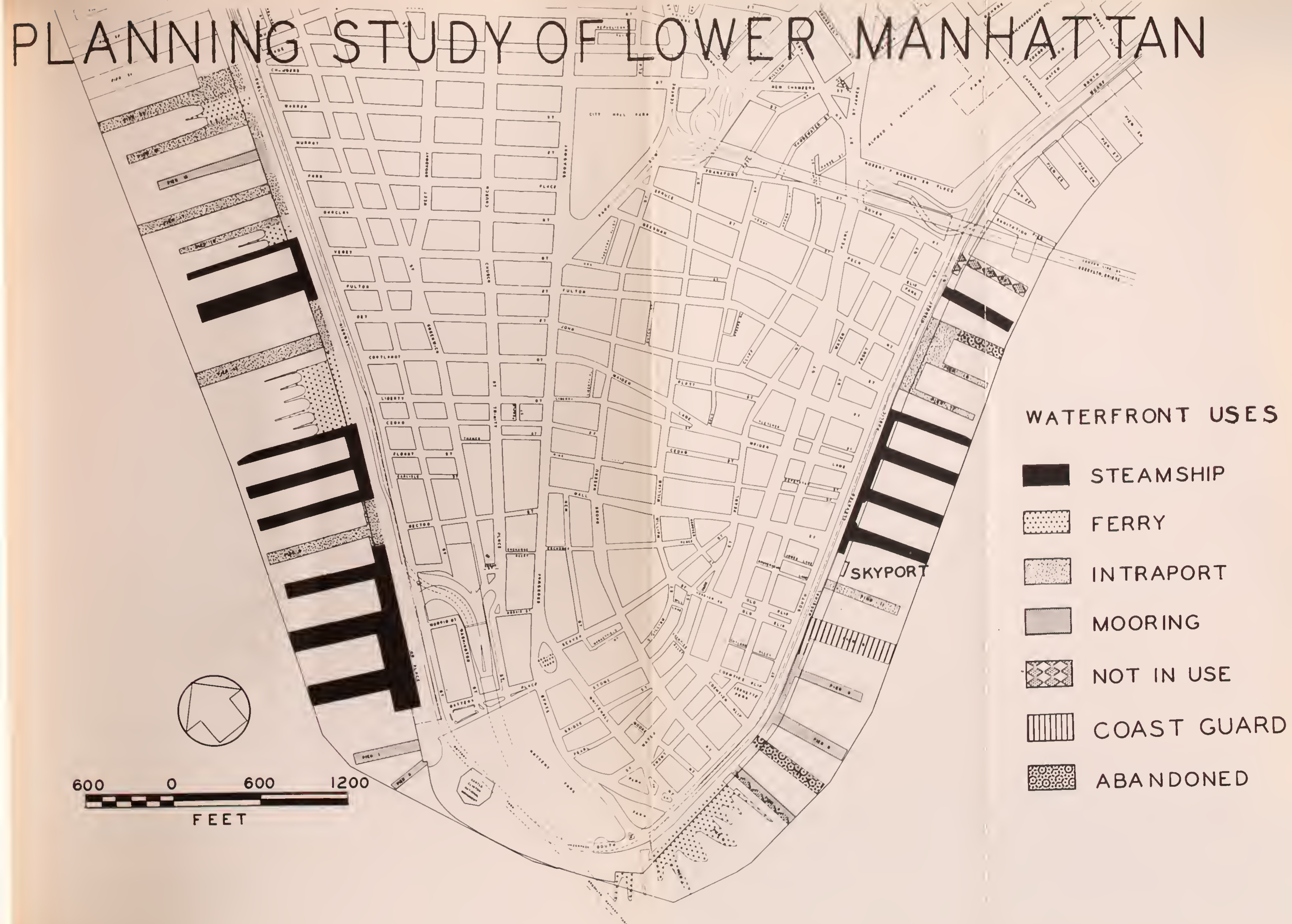
[163] Ibid., p. 69 .

town sections of the Hudson River, and the obsolescence and inadequacy of most of the study area waterfront facilities to meet changing ship needs and the increasing use of the motor truck, have resulted in a continuing decline in function and a deterioration in physical condition.

The elaborate rehabilitation programs of the Port of New York Authority and the Department of Marine and Aviation recognize the physical obsolescence and deterioration of the piers south of Chambers Street, together with their uneconomic functioning. Unfortunately, neither program appears to base its recommendations on a comprehensive port development program utilizing city planning principles and techniques. The need to rehabilitate the East River waterfront in terms of present function is not clearly demonstrated. Serious questions as to what types of pier facilities are needed where, and in what quantities, are left substantially unanswered. These questions become all the more critical when one can view the abysmal condition of much of the city's waterfront from the vantage point of a boat trip around the shore.

Figure 20 on page 109 indicates the various waterfront uses south of Chambers Street. Pier A and Pier 1, on the west side at the tip of Manhattan, house the administrative offices of the Department of Marine and Aviation. Below Pier A is located a small heliport. Piers 2, 3 and 7 to the north of 1, house the United Fruit Company. Pier 8 is used by the Lehigh Valley Railroad as a freight securing and consolidation terminal.

McGrath Stevedoring has Piers 9, 10 and 11 as its terminal, with the Venezuelan Line as the principal user. Pier 13 has been recently leased by the city to the Delaware, Lackawanna and Western Railroad. The Belgian Line occupies Piers 14 and 15, and the New York Central Railroad occupies



PLANNING STUDY OF LOWER MANHATTAN

FIGURE 20

Piers 16 and 17. Pier 18 is owned by Dollar: Pier 19 is leased to the Erie Railroad; and Piers 20 and 21 within the study area are leased, together with with two adjacent piers to the north, to the Baltimore and Ohio Railroad.

In addition to the major users, ferry terminals operate at Cortlandt, Barclay and Chambers Streets. These terminals are operated by the railroad lines to provide commuter service. Efforts on the part of the railroads to relinquish them to the Port of New York Authority have been unsuccessful in the past. Recently the railroads renewed their offer to turn the ferry terminals over to the Authority, and stressed that the contention of the Port Authority that they could not operate deficit-producing facilities was without any basis in fact.

The East River waterfront begins with the ferry terminal serving Governor's Island, and with the Whitehall Terminal which provides ferry service to Staten Island and Ellis Island. Pier 4, immediately north, is occupied by the Department of Purchase. Piers 4, 6 and 8 have recently undergone some rehabilitation, with the superstructures at the two latter piers having been removed. Pier 9 is occupied by the United States Coast Guard, but there are plans to relocate this agency at a new Battery location and to lease Pier 9 to the Standard Fruit Company which would move from Pier 13. Pier 11 is used by the New York Steam Corporation, a subsidiary of Consolidated Edison. Immediately north is the Downtown Skyport. Piers 14, 15 and 16 are used by the North Atlantic and Gulf, and Prudential Steamship Lines.

The Fulton Fish Market occupies Piers 17 and 18 under the jurisdiction of the Department of Markets. Pier 20 is used by the Iceland Steamship Company. Piers 5 and 19 are abandoned, and Pier 21 is not in use.

More than 80 million dollars have been spent or committed in the Port of New York since the end of World War II. Nevertheless, the port still lacks an integrated port development program. The Manhattan waterfront and the waterfronts of the other boroughs require extensive reconstruction and rehabilitation not merely in terms of their physical inadequacies, but in terms of their functional relationship to the economy of the city and to the physical plan of the city. "This problem of integrating a program for the reconstruction of the whole Port is fundamental to the future of the waterfront."[164]

As previously indicated, both the Port of New York Authority and the Department of Marine and Aviation have ambitious plans for the redevelopment of the port. While there are undoubtedly minor differences in physical plans, there is general agreement on the obsolescence and inadequacy of the existing facilities. It is essentially in the area of administration and control that the major conflict rages, and acrimonious charges and counter charges are hurled by both agencies.

The plans call for extensive new construction of modern cargo piers to replace the antiquated piers that were inadequate half a century ago. Rehabilitation or modernization is proposed for those piers that will not be replaced.

In terms of the needs of the city and of the study area, and in view of such technological factors as ship size, depth of pier, and the like, it

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[164] Austin J. Tobin, Transportation in the New York Metropolitan Region During the Next Twenty-five Years (New York: Regional Plan Association, Oct. 1956), p. 13.

appears that the Hudson River waterfront should be retained in port use. The East River, on the other hand, cannot be so easily assigned such a function. Currently a number of East River piers are either in disuse or are in marginal operation. The removal of waterfront activity, except for limited sections, and the creation of park and recreational pier use appears to have a tremendous potential in any proposed redevelopment of the study area. "Generally speaking, ...river frontage is in the hands of business when it should be the center of the life of the city as it is in European countries, where the waterfronts have been retained in public hands."[165]

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[165] Frederic C. Howe, The Modern City and Its Problems (New York: Scribners, 1915), p. 200.

CHAPTER X

Wholesale Produce Market

The sale of agricultural goods and products in the marketplace is one of the oldest of urban functions. The agora of Greek cities, the forum of Roman cities, and the commons and courthouse squares of English and American towns were the scene of great marketing activity.[166]

Development of the wholesale produce market came about as the result of improved transportation systems, and new techniques in the preservation of food products.

Historically, the handling of produce in New York City gravitated to the waterfront about 1835, when the market first began handling shipments from places along the southern Atlantic coast and from overseas. The growth of the produce market along the waterfront was given impetus around 1890, when the railroads began to handle large quantities of products from all over the United States. Railroad cars would be loaded on floats at the New Jersey shore, towed across the river, and berthed at piers along Manhattan's lower west side. Here the produce is removed by handtruck and made available to the consignees on the dock.[167]

In recent decades, an increasing amount of produce shipment has shifted from rail to truck delivery. The critical lack of truck access to

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[166] American Society of Planning Officials, Wholesale Produce Markets Planning Advisory Service Information Report No. 70, (Chicago: American Society of Planning Officials, January 1955), p.l.

[167] Port of New York Authority, Proposal for Development op. cit., p. 70.

the waterfront terminals has resulted in acute congestion, and has further aggravated problems of uneconomic handling and waste, with the resultant being an increase in living costs.

Most wholesale markets in various cities have developed in similar ways. Generally near the center of the city, the market district contains the stores of fruit and vegetable dealers, butter and egg dealers, dairy products, dry groceries, dealers in related fields, and auxiliary services.

In large measure, the present problems of the produce market stem directly from the lack of planning in their development.

While the location of the produce market in the Washington Street area may have been appropriate a hundred years ago, there is serious question as to the economic justification of its location there today. Located on the periphery of an expanding central business district desperately in need of room for expanding functions, the produce market occupies obsolete and de-decaying non-fireproof structures, and contributes significantly to the critical congestion in the core of the city.

Assessed valuations are low in comparison to those of prime business properties located just a few blocks away, and the tax return to the city is low.

The inadequacy of the physical facilities of the market result from the continued use of buildings generally designed for other purposes than those of food handling and storage. Overcrowding of buildings, streets and other areas throughout the district characterize its functional inadequacy. Hemmed in by surrounding and incompatible uses, no expansion is possible to open up the area and so provide vitally necessary space.

The high volume of traffic of trucks generated by the produce market

has a blighting effect on adjacent and surrounding areas.

The lack of adequate transportation facilities constitutes one of the most serious of the multitudinous problems affecting the Washington Street area. The narrow streets are inadequate to handle the truck traffic, and the volume of traffic is such that the resultant congestion has serious deleterious effect upon other areas of the city. Few buildings have loading platforms which permit level loading from truck to warehouse floor. Street area is often preempted for storage space, and spoilage and contamination are commonplace. Building owners show a remarkable aversion to spending money for improvements on the grounds that ultimate replacement by newer facilities elsewhere constantly hangs over their heads like the sword of Damocles. On the other hand, exorbitant rentals are more often the rule than the exception. Higher prices and lower quality are the inevitable results of the manifold shortcomings of the wholesale produce market. Only a complete rebuilding as a functional entity in harmony with its surroundings can eliminate these problems now plaguing the wholesale produce market.

Numerous proposals have been advocated during the past four decades with respect to improving the terminal market distribution. These proposals have included recommendations for the complete rebuilding of the market on or immediately adjacent to its present location; minor cleaning up and face-lifting; relocating the facility elsewhere; and decentralizing the market through removal of some of its functions. The recommendations of the Port of New York Authority call for a new facility in the same area as the present market but with the essential difference being in the use of area over the water in order to minimize land aquistion costs and to provide adequate space for trucking activity. Decentralization and relocation of market facilities

elsewhere are regarded by the Port Authority as offering no demonstrable advantage over the retention of the produce terminal on lower Manhattan.[168]

An analysis of the various proposals for rebuilding the produce market on its present site or elsewhere is obviously beyond the scope of this study. However, the six criteria formulated by the Department of Agriculture to determine the adequacy of a produce market site appear to be compelling arguments for the construction of a new produce market elsewhere than at the present location. These criteria are: (1) convenience for local buyers, (2) convenience for out-of-town buyers, (3) convenience for motortruck receipts, (4) a location that avoids non-market traffic, (5) convenience for rail receipts, and (6) the availability of land at a reasonable cost.[169]

The present produce market area should be redeveloped for non-residential uses - preferably light manufacuring and warehousing. Such redevelopment should not be allowed to proceed piecemeal and on an ad hoc basis, but in conformity to an overall plan formulated or approved by the Departments of City Planning and Traffic.

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[168] Ibid., p. 70.

[169] American Society of Planning Officials, Wholesale Produce Markets op. cit., p. 15.

CHAPTER XI

Conclusions and Recommendations

Lower Manhattan presents a wonderful opportunity to develop an efficient and practical core possessing all of the elements of attractiveness and beauty. The downward trend characterizing the area, as it does the central business district of most municipalities, can be reversed only through a program of comprehensive planning. The implementation of such planning would have as its objectives an attractive core free of congestion, the development of a center of community activity, and the creation of new values in urban living.

The ills of the city are compounded of many factors, some of them fairly obvious while others are obscured. But whatever the causal factors are, one thing is certain, and that is that the city shows no sign of curing itself. The little plans that Daniel Burnham warned against are ineffectual in any major attack on the problems of the city. The traditional reliance on a superhighway connecting nowhere with nowhere, a slum clearance project that creates more problems than it resolves, a one-way street or new parking lot -- all of these fall far short of the new concepts and new designs necessary to reverse the trend and pattern of congestion, blight and flight.

It has been stated that our cities were "conceived in indifference and reared in neglect," with the inevitable result of "metropolitan confusion and deterioration."

The rebuilding of our cities is our greatest problem and our greatest opportunity.

The Golden Triangle of Pittsburgh and the Golden Gateway of San Francisco are two examples of areas where the challenge of replanning is being met. If these areas can be characterized as "golden", then the area south of Chambers Street in Manhattan must be considered as "platinum" in the words of Sam Joroff, Director of Research for the New York City Department of City Planning. No other area compares in importance to the study area, and yet other areas have embarked on sweeping approaches to the complex problems besetting them.

In essence, the problems of Lower Manhattan can be summarized very briefly:

1. Incompatible land uses and the absence of integrated functionally-related areas are major contributors to the ills of the area.

2. Traffic congestion is a vital factor in the continuing deterioration of the area.

3. Every street of any importance is subjected to excessively heavy vehicular traffic, much of which has neither origin nor destination in Lower Manhattan.

4. The friction of space between pedestrian and vehicle is a major determinant in the decline of the area.

5. The mass transit system is inadequate to meet the pressing needs of the area.

6. The absence of adequate open space, the paucity of community facilities, and the dearth of convenient and attractive retail shopping areas all contribute to the unattractiveness of the area.

7. The decline of the waterfront from a position of eminence to one of uneconomic and inefficient use continues inexorably.

8. Many of the physical structures are obsolescent, and unfunctional for the uses which they currently serve.

9. Many property values have continued to decline, and there has been considerable deterioration of economic productivity.

10. What little planning has been proposed for the area in the way of new housing or street widenings is either unrealistic, piece-meal, or merely palliative for a short period.

11. A general atmosphere of inertia, indifference or pessimism seemingly continues to affect politician and businessman in the area alike.

12. The administrative framework necessary within the municipal government to undertake a project of such scope as the redevelopment of Lower Manhattan does not exist.

Many schemes have been advanced for solving the ills of the modern city. Nevertheless, sharp disagreement rages over which form the city of the future should take. It is the contention of this study that the urban city, with all its many shortcomings, is among the greatest achievments of man. The remolding of the great cities into new and more amenable shapes is within our power.

The various design and non-design proposals put forth in this study are based on the belief that the city can be improved, and that it must be improved if it is to survive.

One major consideration must guide any future redevelopment of this study area, or of any study area, and that is its appropriate place in the framework of the entire city. The study area is a vital and functionally unique area of the city which should be redeveloped in harmony with, rather than in competition with, other areas of the city.

While two design schemes are presented in this study with respect to housing around the Battery Park section for reasons indicated in Chapter III, a major conclusion of this study is that such housing is unwarranted and unnecessary to revitalize the study area. The needs of the financial and insurance districts are such that a logical land use plan would make provision for accessory service uses, and for room for expansion for the core, in conjunction with an opening up of the area to provide space, light and other amenities. If the sole purpose of the proposed Battery Park Houses is to obtain Title I funds as has been intimated, then two very obvious facts bear repetition. The first is that the financial district, with all its prestige and power, need not stoop to such a stratagem for so paltry a sum as may be involved. The second fact is that the provision of residence will solve no problem other than the cleaning up of an area best accomplished by other uses, and will create far more serious problems which will only further aggravate the ills of the core.

The proposed generalized land use map on page 121 differentiates the proposed redevelopment areas in terms of function. An industrial area is recommended south of Brooklyn Bridge extending south to a widened Fulton Street, and west from the East River to Gold Street. This area is designed to provide space for light industrial and heavy commercial activities, and to replace the remnants of the leather industry. It is recommended that the Fulton Fish Market remain in the area in a new facility, and that multi-purpose parking be provided that will serve the market during the early morning hours and the industrial and service uses during their business day. The decision to retain the Fulton Fish Market is based upon the considerations that its present location is the result of long organic development, and

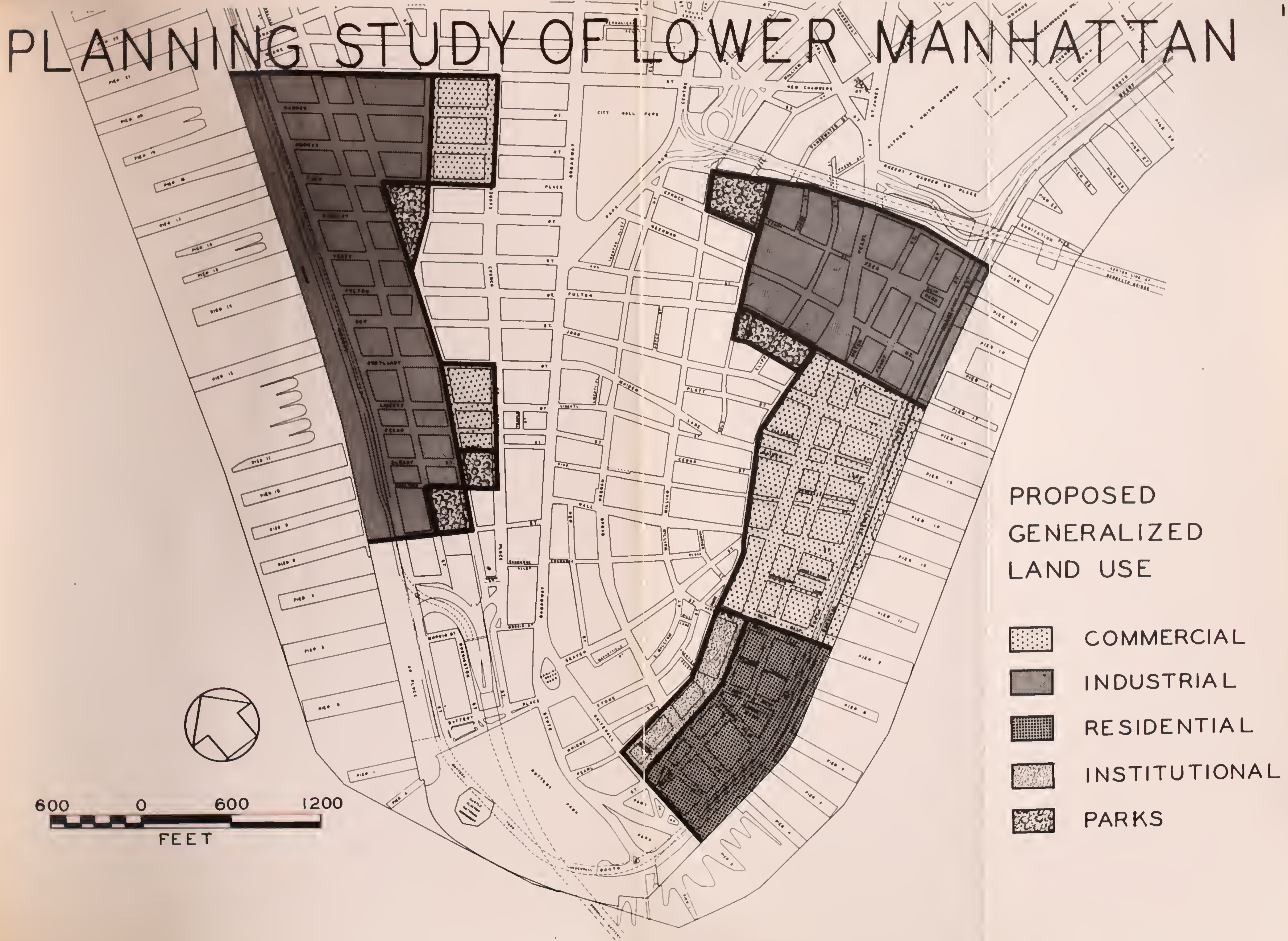
PLANNING STUDY OF LOWER MANHATTAN
PROPOSED GENERALIZED LAND USE
COMMERCIAL
INDUSTRIAL
RESIDENTIAL
INSTITUTIONAL
PARKS
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FIGURE 21

that it represents a tradition that has valuable potential for attracting visitors to the area.

A second and larger industrial area is proposed along the west side north of Rector Street. This area is intended to provide space for many of the incubator activities that characterize New York's industry. It is proposed that the Washington Street Market area also be redeveloped for light industrial use and for commercial activity in support of the core function.

Three commercial areas are designated within which it is recommended that accessory core services, and retail uses be developed. Five small parks are strategically placed to provide the rare amenity of green open space, and in a limited way to act as buffers between various uses. The residential district as mapped constitutes an enlarged area as compared to that officially proposed. If housing is to go into the area, then it should not be an isolated enclave, but should be large enough to contain a variety of community facilities which would make it self-sufficient so that public facilities would not be necessary to subsidize a small element. The remainder of the core area is in commercial use, except for certain park and institutional uses. A small institutional district is proposed as a suitable setting for Fraunces' Tavern and for some proposed historical restorations.

Although not shown on the land use plan, extensive redevelopment of the East River waterfront is recommended through the construction of a recreational facility, a heliport, and several new cargo terminals. Properly planned with waterfront-oriented office buildings, shopping centers, recreational uses, and possibly a small hotel, the now blighted waterfront can be made into a beautiful environment strengthening the core and providing a considerably higher tax base than now realized. The new cargo handling piers would provide for the shipping needs of the proposed industrial area.

For the Hudson River waterfront, an extensive redevelopment is proposed that will perpetuate the present waterfront uses in modern and adequate facilities, and which would revitalize this important function.

Figure 22 on page 124 presents a proposed circulation pattern for the study area. The major streets are so delineated as to create not only the superblocks proposed within the study area, but also to identify the proposed core superblocks of the future. Five major north-south routes are proposed, two of which are part of the arterial network. Through east-west circulation is provided only via Chambers and Fulton Streets, while partial east-west movement is provided at Battery Place and Wall Streets.

The proposed circulation scheme is designed to provide for the free movement of vehicles which serve the major functional areas.

Ideally, most of the study area should be made into a series of connected pedestrial islands. While attitudinal values and other physical factors make such a concept difficult of realization in the initial stages of redevelopment, the objective in Lower Manhattan should be to limit the number of arteries traversing the core, and to provide service to buildings through special service streets where necessary.

It is recommended that each of the proposed arteries be widened, that no parking or loading be permitted, and that wherever possible arcades be provided for pedestrian circulation.

A number of administrative proposals with respect to traffic are recommended. These include one way streets, the prohibition of left turns, the elimination of curb parking, the restriction of truck loading to off-peak hours, the provision of garages only on the periphery, and the prompt enforcement of all traffic ordinances.

Several other proposals which affect not only the study area, but

PLANNING STUDY OF LOWER MANHATTAN

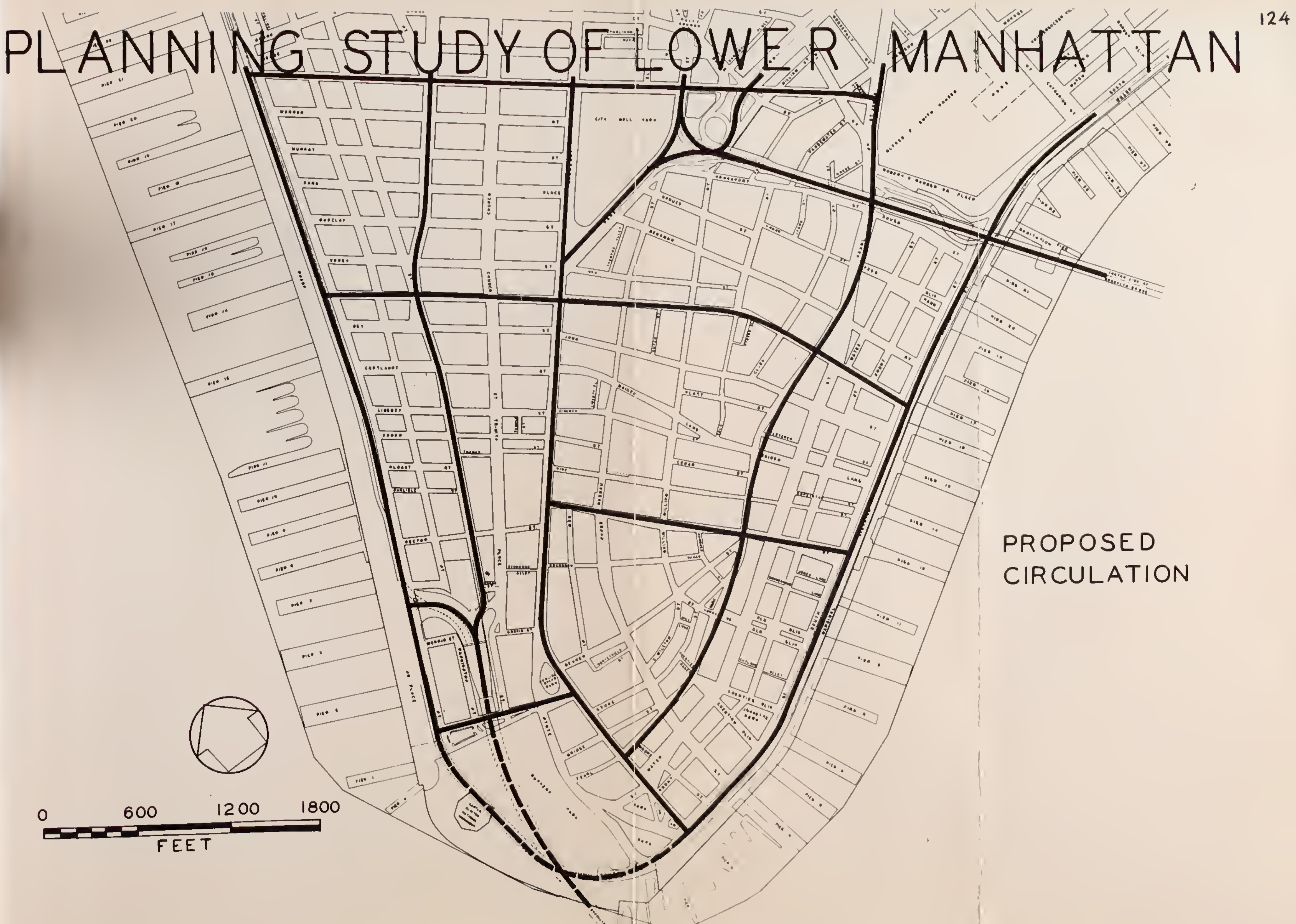

FIGURE 22

have a direct impact on our automotive way of life are worthy of consideration, and are offered here for serious thought. As one technique to reduce the inordinate use of automobiles by one individual, it is recommended that a system of sliding tolls on bridges and tunnels be instituted on bridges and tunnels now charging a flat fee. Where a single person is in a vehicle the toll might be fixed at 75¢, with a reduction for two people, a greater reduction for three and so on. The purpose of such a system would be to discourage the use of the automobile by those who need not use it, but could use other means of transportation instead. The second proposal is that the annual registration fee on cars be determined not on weight, but on length. Cars smaller that 16 feet in length might pay $15 per year; those between 16 and 18 feet would pay $65; and those in excess of 18 feet would pay $115. Such a system is merely fixing an equitable price for valuable space. It is a technique widely practiced in other areas of human endeavor.

With respect to mass transportation, it is recommended that an extensive program of rehabilitation of the existing subway system be undertaken. Stations should be modernized with new lighting, escalators where possible, improved service, and the like. The proposed New Jersey Loop should tie in with existing facilities so as to provide for transfers from all three systems, and should then swing up north to serve the Lower East Side as far north as 14th Street where it would loop to the west. In this manner, in addition to serving the commuter needs, the Loop would tie-together the existing lines and would provided vitally needed rapid transit service to two areas long deprived of such facilities, namely the Lower East Side and the Stuyvesant Town sections.

Within the core area it is recommended that pedestrian ways be created through the elimination of many streets for vehicular traffic. Ultim-

ately a progressive pattern of improvements of superblocks with pedestrian malls, pedestrian ways, and with separation of pedestrian and vehicular traffic wherever possible should give the area a human scale which it once possessed.

To date, efforts to adjust the physical pattern of the city to the voracious requirements of the automobile have been unsuccessful. In essence, these attempts have been unsuccessful because they stem from a basically untenable assumption that the city can provide adequately for the widespread and increasing use of the car. Actually, the city cannot move sufficient traffic to stay alive, and it cannot afford to move large proportions of people by car even during peak hours. The point at which expenditures for new facilities for the autombile exceed the value of benefits received appears to have been met in many areas of the city.

Figure 23 on page 127 depicts the proposed zoning for the study area. Here the area designated as residential on the land use proposal is indicated as the more logical use of service commercial. The proposed zoning would serve to implement the proposed land use , and would set bulk and coverage standards designed to provide adequate light, air and usable open space. Through the device of the floor area ratio, structures in the core would be permitted a more intensive use of land than in the peripheral areas. A large area is designated as Central Business District Commercial, with a permissible F.A.R. of 15.0 Ample room is thus provided for expansion at bulks that are in keeping with current construction. The light industrial areas would be limited to an F.A.R. of 2.5, with restrictions on coverage as in the core, and with performance standards regulating the permitted uses. The proposed Community Commercial Districts are intended to provide for services of a retail and community facility nature, while the Service Commercial District is

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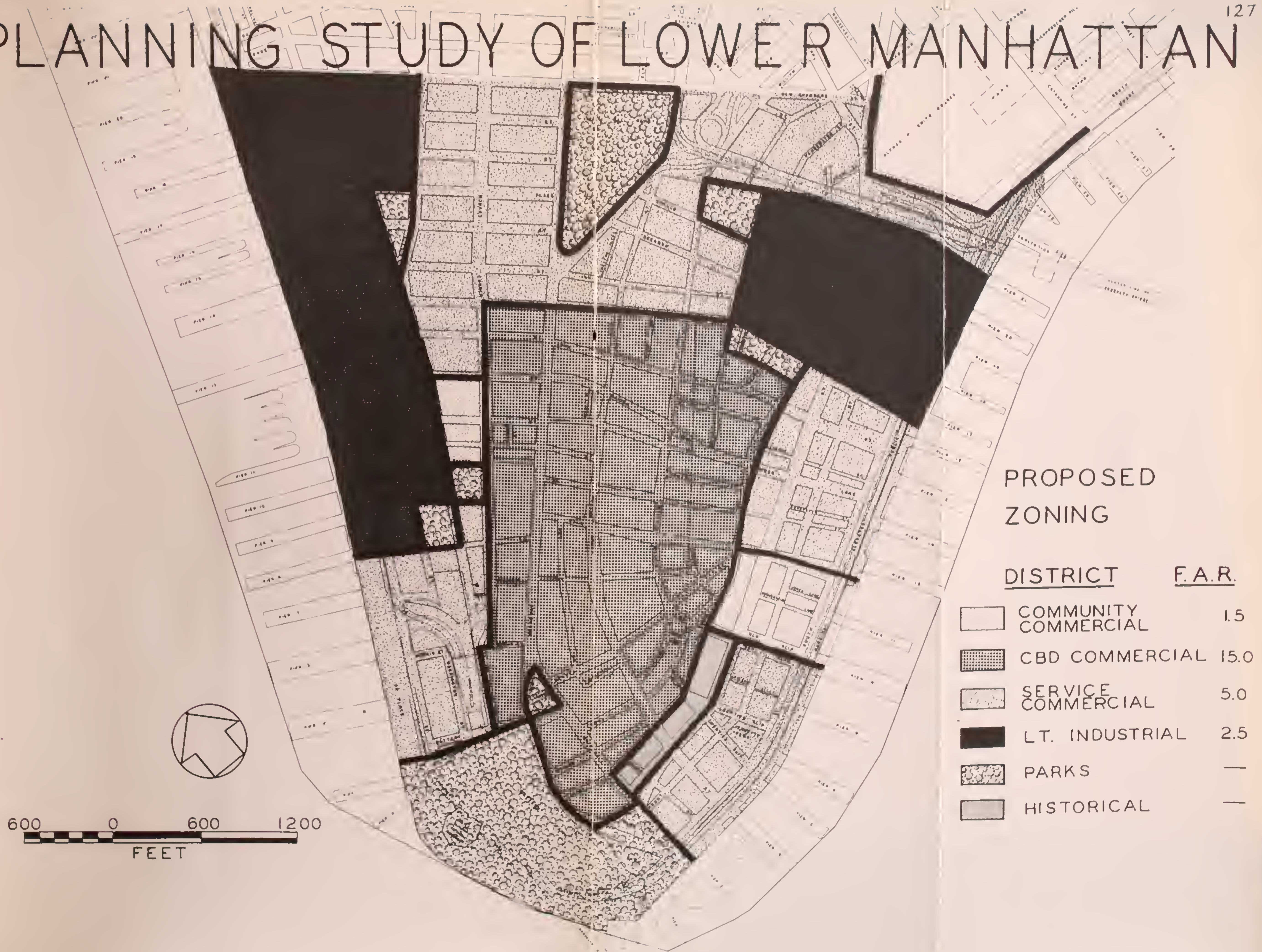


FIGURE 23

intended to house uses essential to the core function, such as machine and office appliance repair, office form printers on a limited scale, tabulating services and the like. The F.A.R. in this district would be limited to 5.0

A realistic and effective zoning ordinance is essential to the redevelopment of the area along desired lines.

Any redevelopment effort usually involves the problem of relocation. The study area is fortunate in that the residential relocation which is recommended to provide for industrial redevelopment on the west side is minimal compared to other undertakings. Regardless of the size of relocation, effective and humane treatment is the democratic right of any person. In the area of social planning as it affects residential relocation from the study area, it is recommended that the city relocate the population of the residential enclave near the Battery Tunnel en masse to an area of their choosing where housing is built by the city to receive them, and that every provision be made to enable the shopping and other facilities serving them to be relocated with them. Admittedly, the problem is a very complex one. The possibility that relocation can be achieved without complete disruption of the social fabric of a neighborhood or of a social unit make it incumbent upon the city to attempt the experiment.

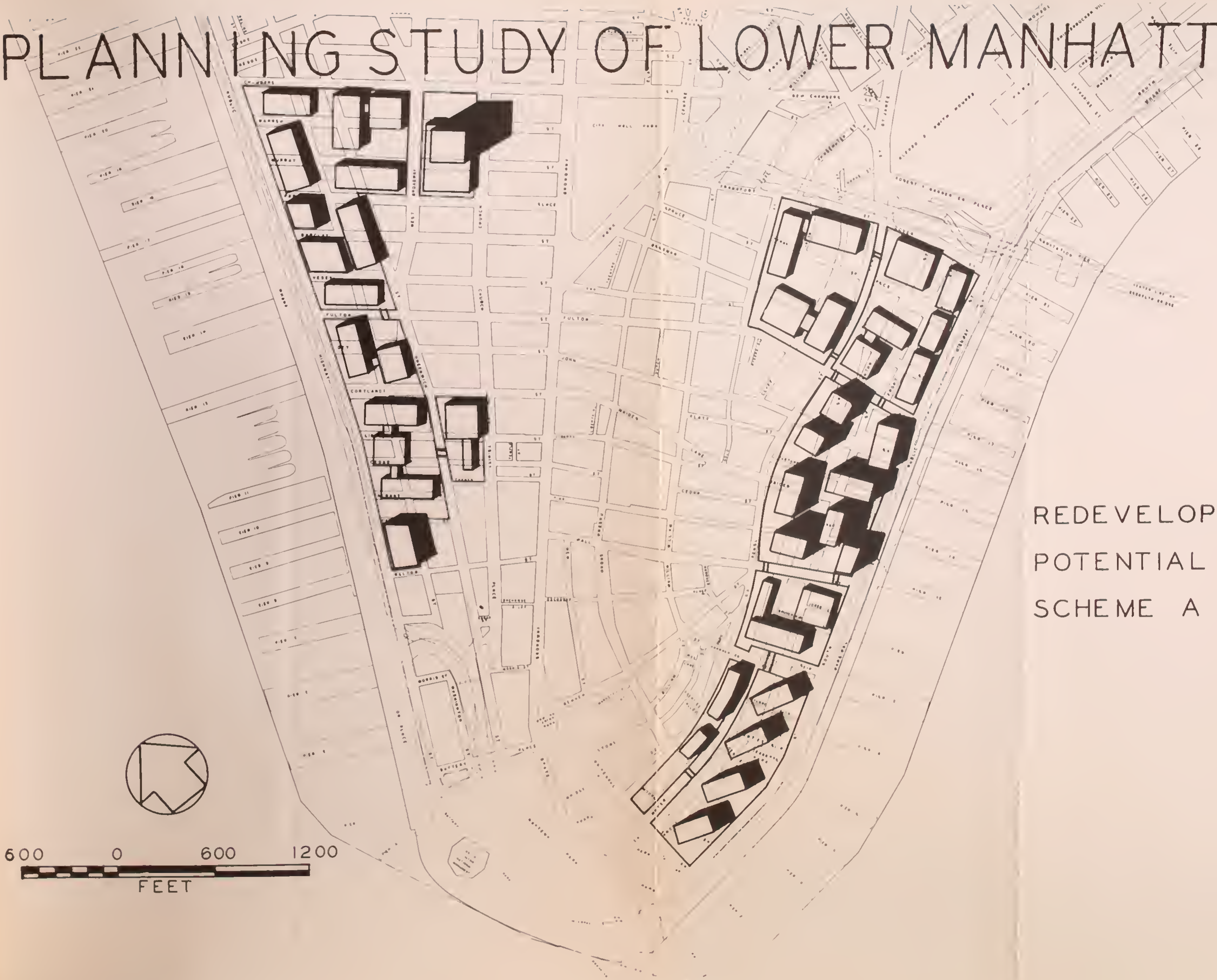
With respect to non-residential relocation from the area, it is recommended that the city embark on a program of relocation by group or activity rather than disrupting economic functions and letting the components shift for themselves. As an example, the city could discuss with the leather industry now centered around the Bridge, their needs and preferences, so that some suitable arrangement could be evolved whereby an activity with all its linkages could be moved with as little dispersion as possible. However small the activity, each contributes to the economy and well-being of the city.

Once the basic determinations with respect to land use and circulation have been made, a wide variety of physical plans can be advanced through which redevelopment of the area can be achieved. Three design proposals are given in the following pages. These designs are merely suggestive of the redevelopment potential of the area and are not advanced purely as recommendations. They are illustrative rather than definitive.

Redevelopment Potential - Scheme A indicates a possible redevelopment in keeping with the conclusions and recommendations of this study. Such existing structures as the American Sugar Building, the World-Telegram and the Post structures, and the A.T. and T. building have been retained and integrated into the design. A Federal Office Building is proposed west of City Hall Park in close proximity to the State Office Building and to other governmental uses to which it is functionally linked. Residence is provided in an expanded Battery Park area site, with a planned shopping district immediately to the north. The historical district contains a museum and other facilities of traditional value. A small shopping area is provided south of Cortlandt Street. The industrial areas are so designed as to provide ample terminal parking and adequate circulation. The commercial and industrial areas on the east are provided with multi-level circulation to separate vehicular and pedestrian movement. Streets are bridged in many cases to allow for the unimpeded movement of pedestrians between areas. Service access, off-street loading and some parking is provided on ground level below the pedestrian platforms. Scheme A is depicted in Figure 24 on page 130.

Redevelopment Potential - Scheme B indicates the possible redevelopment of the area with the area in housing in the previous scheme now given over to commercial and office use. To the north is a planned shopping area designed for speciality shops, a small department store, and such community

A PLANNING STUDY OF LOWER MANHATTAN



REDEVELOPMENT
POTENTIAL -
SCHEME A

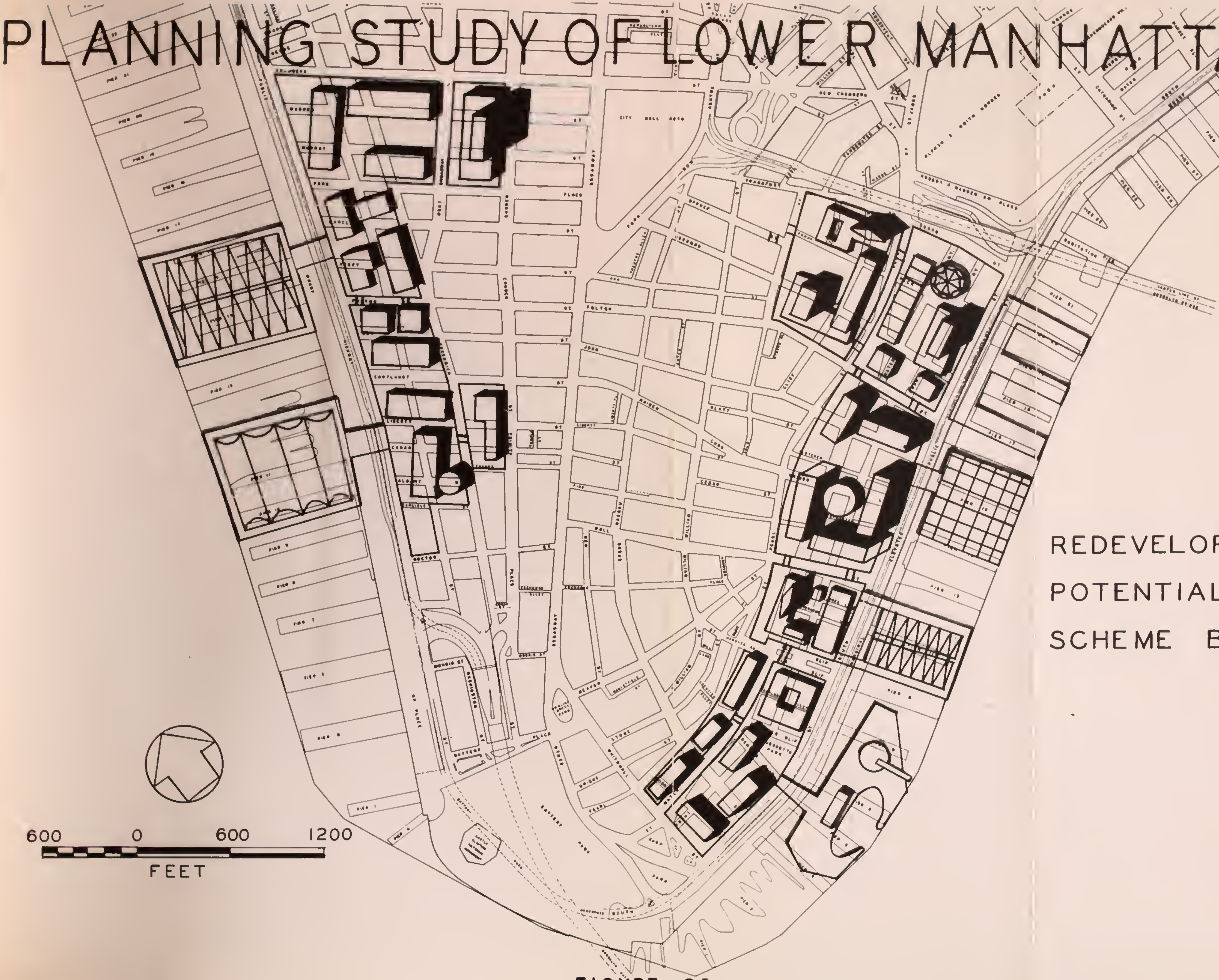
FIGURE 24

facilities as a library and a small auditorium. A service commercial area is proposed between Wall and Fulton Streets with provison for a small hotel and an exhibition hall. The industrial areas and the site for the proposed Federal Office Building depict different building arrangements that are possible in keeping with space and circulation requirements. In Scheme B the waterfront along the East River has been developed with a marina and recreational pier intended to revitalize the shore as a thing of beauty to be enjoyed. To the north a small cargo pier is provided to permit some maritime activity. The service commercial area waterfront has been redeveloped with a heliport, while the industrial area is served by new piers designed to facilitate water shipment and to allow for the continued use of the waterfront by the Fulton Fish Market. The Hudson River waterfront depicts two schematic examples of modern cargo handling piers which are recommended along the entire waterfront. Although not shown, similar development of the waterfronts is recommended in Redevelopment Potential - Scheme A and Scheme B.

As in Scheme A, Scheme B proposes a similar separation of vehicular and pedestrian traffic through the use of multi-level circulation systems, and the clear deliniation of functional areas. Scheme B is illustrated in Figure 25 on page 132.

Redevelopment Potential - Scheme C shows still another variation on the proposed Federal Office Building between Church Street and West Broadway, south of Chambers Street. Similarly, the other areas show other possible alternatives to the physical design. Again the separation of vehicular and pedestrian circulation is stressed, and provision is made for adequate open space amid a setting intended to renew human values and human scale. Scheme C is shown in Figure 26 on page 133.

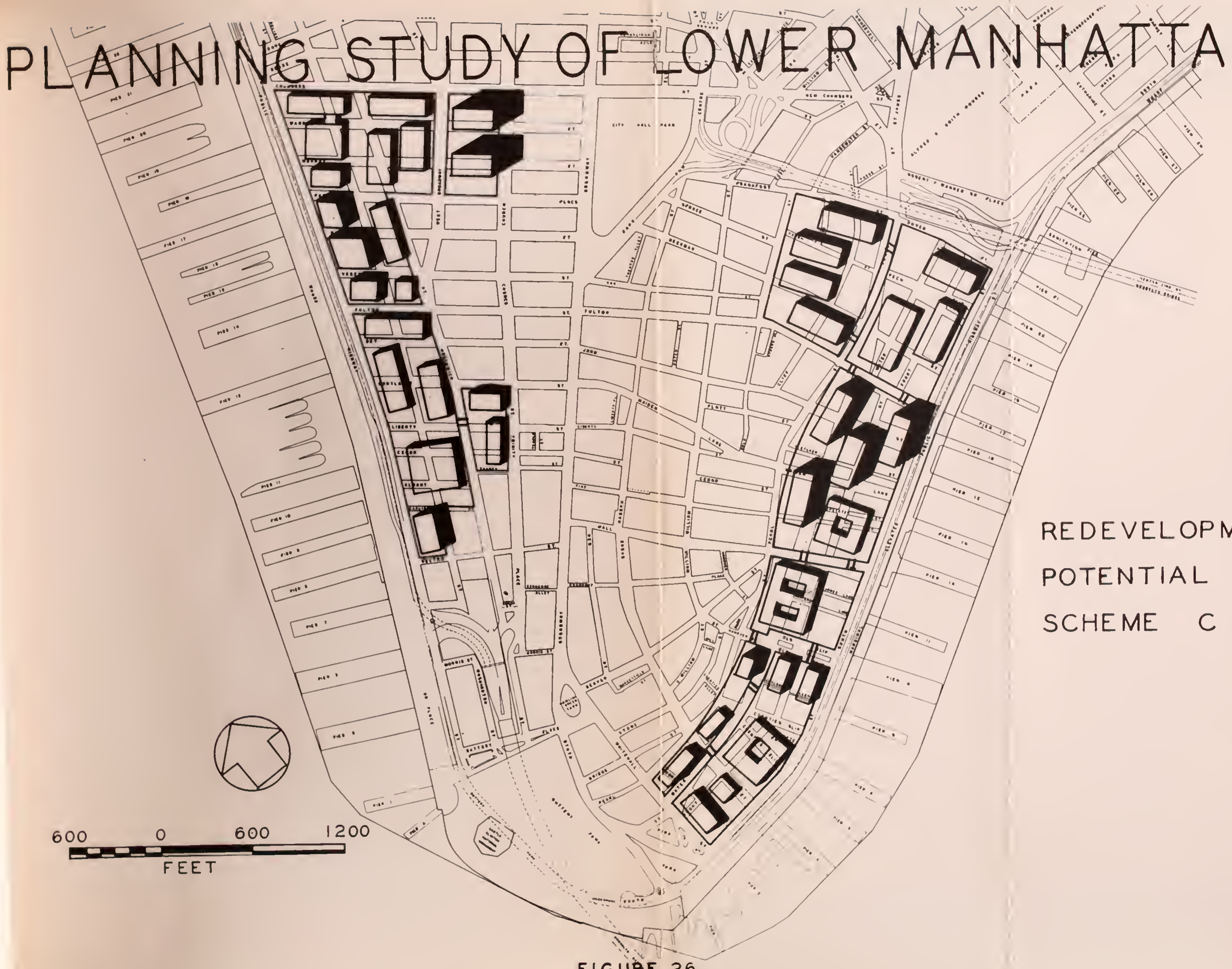
PLANNING STUDY OF LOWER MANHATTAN



REDEVELOPMENT
POTENTIAL -
SCHEME B

FIGURE 25

PLANNING STUDY OF LOWER MANHATTAN



REDEVELOPMENT POTENTIAL — SCHEME C

FIGURE 26

The proposed redevelopment of Lower Manhattan is a tremendous undertaking of considerable complexity. In order to effectuate the plan, several factors are basic. These include the firm support of the city administration; financial and organizational support from the business community; firm leadership from the City Planning Commission and from the Department of City Planning, working in close cooperation with civic and other groups; coordination by the Department of City Planning of the activities of all agencies; a program containing a carefully formulated series of objectives to permit the staging of redevelopment; and a practical long-range financial plan including the use of private and public funds, urban renewal grants, and assistance from non-profit foundations and organizations.

In the area of legislation, a non-residential Title I is clearly needed. While there is increasing belief that write-down subsidies are not necessary even where residential redevelopment is involved, the problem of land assemblage is so acute that only through the power of eminent domain can any effective beginning be made.

A new Redevelopment Authority is recommended to undertake the planning of the study area. The primary function of the agency would be to acquire, clear and dispose of the land in accordance with the redevelopment plan. It is further recommended that the Chairman of the City Planning Commission serve as a member of the Authority.

In connection with the proposed New Jersey Loop, it is recommended that the Port of New York Authority be charged with the responsibility of constructing and operating such a facility

The task is difficult, but cities are made by men, and men can make of their cities what they choose to make of them.

APPENDIX A

CHRONOLOGY

Important Events in the History of Lower Manhattan

1609	Captain Henry Hudson, an Englishman employed by the Dutch East India Company, sails into New York Harbor.
1624	The first colonists arrive at New Netherland.
1626	"Manna-hatin" is purchased by Peter Minuit, for the West India Company.
	Fort New Amsterdam is established at about 1 Broadway, giving its name to the settlement on lower Manhattan.
1633	The first church building is erected on Manhattan.
1638	William Kieft arrives as director of New Netherland.
	The first ferry is established between Manhattan and Long Island, from the present Dover Street, at the corner of Pearl, to Fulton Street, Brooklyn.
1644	A fence, known as "the waal" is built along the northern limit of the settlement on Manhattan, to keep out cattle. From this the street that later grew up on its site became known as "Wall Street."
1651	The great "Bouwerie," or farm, on Manhattan from which "The Bowery" is named is purchased by Stuyvesant.
1652	The original fence along the site of Wall Street is replaced by a stockade or fortification.
1653	The city limits of New Amsterdam are set at the Collect or Fresh Pond.
1654	The first shipload of Jews, twenty-three in number, arrive from Holland under Asser Levy.
1658	Stuyvesant builds the house later called Whitehall, which gave its name to Whitehall Street.
1661	The first ferry between Manhattan and New Jersey is established.
1664	Charles II of England, maintaining English claims over the Dutch territory, bestows it upon his brother, the Duke of York and Albany.

The disputed territory is captured September 6 by the forces of James, Duke of York, New Amsterdam becomes New York, and the river known earlier as the Mauritius (in honor of Prince Maurice of Orange) or the North River (to distinguish it from the South or Delaware River) is now called the Hudson River.

1667 The Dutch cede New York to the English in exchange for the unimportant little colony of Surinam in South America, by the Treaty of Breda.

1670 The Merchant's Exchange is established at Broad Street and Exchange Place.

1673 For the first time, real estate deeds are recorded in the city of New York.

New York is captured by the Dutch on August 9, and its name changed to New Orange.

1674 New York's name is again made New York, after being restored to the English by the Treaty of Westminster.

1676 The canal that formerly ran down the middle of Broad Street is filled in.

1683 The City of New York is given a charter, dividing it into six wards.

1692 King Street (later called Pine) is laid out.

1703 The Queen's Farm, comprising a vast tract of land from Fulton to Charlton Street, and west from Broadway to the Hudson River, is granted to Trinity Church.

A battery is erected on the point of rocks now filled in and forming the site of the former Aquarium at the Battery.

1704 A new City Hall is completed on Wall Street (later converted into Federal Hall).

1713 The first ferry between Manhattan and Staten Island is established.

1725 The publication of the first New York newspaper, "The New York Gazette," is begun by William Bradford on the present site of the Cotton Exchange.

1730 Cherry Street is laid out and named for the cherry orchard of Richard Sackett.

Frankfort Street is named in honor of Jacob Leisler's birthplace in Germany.

1731 The first municipal bonds are issued by the city.

1733	The plain at the foot of Broadway is leased to John Chambers, Peter Bayard, and Peter Jay for one peppercorn a year, on condition that they maintain it as a bowling green, thus giving it its present name of Bowling Green.
1739	Greenwich Street is surveyed and laid out.
1754	King's College is chartered, and its first building is erected near the present site of the Woolworth Building.
1755	Park Row is laid out.
1762	Etienne de Lancey's house at the corner of Pearl and Broad Streets, is purchased by Samuel Fraunces and is made over into Fraunces' Tavern.
1770	The Battle of Golden Hill occurs at the site of the present John Street, the first "battle" of the Revolution with bloodshed on both sides.
1776	New York City is occupied by the British. A great number of buildings in the city, among them Trinity Church, are destroyed by fire. New York City becomes a prison headquarters for the duration of the Revolution; the City Hall, an old sugar house on Liberty Street, the Middle Dutch Church at Nassau and Cedar Streets, and prison ships anchored in Wallabout Bay, serving as the most notorious dungeons.
1783	New York is evacuated by the British.
1789	A dozen merchants meeting under a buttonwood tree at 68 Wall Street form the Stock Exchange.
1794	The Tontine Coffee House, long famous as a meeting place for merchants, is completed at Wall and Water Streets.
1798	The Park Theatre is opened in Park Row, between Ann and Beekman Streets, with a performance of "As You Like It."
1799	A corporation entitled "The President and Directors of the Manhattan Company" is chartered as the first public utility of New York, a water company with a clause written into its charter by Aaron Burr that permitted it to open a bank, until recently known as the Bank of Manhattan Trust Company.
1810	The Collect, or Fresh Water Pond, is filled in.
1811	The "Commissioners' Map" which lays out the present city streets north to 155th Street is completed by the City Planning Commission.

The first steam ferry is established to Hoboken.

1812 The new City Hall in City Hall Park is completed.

War is declared with Great Britain, and New York has a recurrence of privateering.

1814 The first steam frigate is launched in the shipyard of Adam and Noah Brown at Corlears Hook.

1822 Fulton Market is established.

The Battery and Castle Clinton are ceded to the city by Congress.

1825 The completion of the Erie Canal is celebrated in New York.

"Slote Lane" is renamed Exchange Street.

1830 Ground is broken for the Mohawk and Hudson Railroad, the first railroad line (now part of the New York Central).

1832 The New York and Harlem Railroad begins operating with hors cars from Prince Street to Murray Hill.

1835 The so-called "Great Fire" breaks out in Hanover and Pearl Streets, destroying nearly 700 buildings, and property to the value of $17,000,000.

1841 John Ericsson of New York builds the first screw-propeller vessel, the "Princeton."

John W. Griffiths, naval architect of New York, designs the first "clipper ship," destined to inaugurate what is known as the "Golden Age" of New York Shipping.

The first steam fire engine is tried in New York.

1842 The Croton water system is completed.

1846 The present Trinity Church is dedicated, the third building on that site.

The sewing machine is patented by Elias Howe and his invention has an important effect on the development of the garment industry in New York City.
The United States Government establishes a sub-treasury in New York City.

1850 The first elevator is installed at 201-203 Cherry Street.

1851 The celebrated clipper ship, "Flying Cloud," makes a record trip between New York and San Francisco in eighty-nine days and eighteen hours.
The Hudson River Railroad is opened, from New York to Albany.

1855	Castle Garden becomes an immigrant station.
1868	The first experimental elevated railroad is erected from the Battery to Cordlandt Street on Greenwich Street. The Beach Pneumatic Transit Company is given a right to build a subway from Fourteenth Street to Nassau Street, but the attempt is abandoned.
1870	The construction of Brooklyn Bridge is started. The Equitable Life Assurance Society Building is erected on Broadway at Cedar Street, the first office building in New York equipped with passenger elevators.
1871	The New York Cotton Exchange is incorporated. Steam trains are first used on the elevated railroad in Greenwich Street.
1875	The Rapid Transit Commission is created.
1883	May 24 -- the Brooklyn Bridge, the longest suspension bridge in the world, is opened.
1885	The first law regulating the height of buildings in New York is passed.
1888	The first modern "steel skeleton" structure, the Tower Building at 50 Broadway is erected. Electric trains are installed on the New York elevated railway lines for the first time.
1890	General Charles Smith invents the caisson form of construction for foundations of skyscrapers, greatly affecting the architecture of New York.
1897	The first trolley car crosses Brooklyn Bridge.
1898	Greater New York is established.
1900	Subway construction begins in New York, the first spadeful of earth being turned by the Mayor in front of the City Hall.
1903	The influx of 857,046 foreigners into New York breaks all immigration records. The Stock Exchange Building, at Broad and Wall Streets, is completed.
1904	The New York Subway system opens from City Hall to West 145th St. The first tube of the McAdoo Tunnels opens to Jersey City (completed in 1909).
1906	Fraunces' Tavern is reconstructed according to its appearance at the time of Washington.

1907	The Custom House at Bowling Green is completed.
1911	The Hall of Records, in City Hall Park, is completed.
1913	The Municipal Building on Park Row is completed.
1916	First comprehensive zoning ordinance passed.
1917	The Catskill water system designed to supply New York with an adequate water supply, is completed.
1919	The Clark Street Tunnel to Brooklyn is completed.
1921	The Port of New York Authority is established.
1923	The Building Code, setting new specifications in regard to "set back" architecture, is adopted in New York.
1925	Boom period of office construction begins.
1927	The Holland Tunnel is opened.
1929	Construction is started on 40 Wall Street - a 927 foot skyscraper.
	The stock market crashes.
	Construction is started on Miller Highway.
1932	The independent Subway from Chambers Street to Boro Hall, Brooklyn is opened.
1948	The Miller Highway from Duane Street south to Carlisle Street is completed.
1950	The Brooklyn Battery Tunnel is opened 10 years after construction began.
	The Battery garage opened.
	The El is discontinued and demolished from South Ferry to Chatham Square.
1952	Battery Park is reconstructed.
1954	Brooklyn Bridge reconstruction is completed.
	The South Street viaduct is completed.
1956	City Hall is renovated.
	The Ferry terminal is completed.
1957	The second office building boom begins.

APPENDIX B

Cal. No. 3

CITY PLANNING COMMISSION

Modification of the Master Plan of Sections Containing Areas Suitable for Development and Redevelopment comprising the addition of a new Section M-19 containing substandard and insanitary areas suitable for clearance, reconstruction and rehabilitation for predominantly residential use, bounded by Coenties Slip, South Street, Whitehall Street, Water Street, Broad Street and Pearl Street, Borough of Manhattan.

CP-12751 December 19, 1956

On December 30, 1954, the City Planning Commission adopted as a part of the Master Plan, five borough maps, designated as Plan RS-5, showing Sections Containing Areas Suitable for Development and Redevelopment.

On July 26, 1956 (Cal. No. 520-A), the Board of Estimate adopted a resolution authorizing the Committee on Slum Clearance to make application to the Federal Housing and Home Finance Administrator for advance planning funds to prepare studies, surveys and plans for an Urban Renewal Project, designated as Battery Park Area within the area bounded by Coenties Slip, South Street, Whitehall Street, Water Street, Broad Street and Pearl Street, Borough of Manhattan.

In connection with the contemplated urban renewal project a study was undertaken to determine whether the area involved is suitable for addition to the Master Plan as a new Section Containing Substandard and Insanitary Areas Suitable for Clearance, Replanning, Reconstruction and Rehabilitation for Predominantly Residential Use.

On October 17, 1956 (Cal No. 24), the Commission fixed a date for a public hearing on the matter of modifying the Master Plan, by the addi-

tion of new Section M-19 bounded by Coenties Slip, South Street, Whitehall Street, Water Street, Broad Street and Pearl Street.

The hearing was duly held on November 7, 1956 (Cal. No. 47). A representative of the Citizens Housing and Planning Council recommended further study of the larger area including and adjoining the proposed section, to determine whether the trends in office buildings and waterfront development would indicate the need for more space for business and warehouse redevelopment and questioned the advisability of a residential pocket of limited size within a predominantly non-residential territory. Attention was also called to the lack of schools, retail stores and other community facilities to serve the contemplated new residential development.

The area proposed to be added to the Master Plan as new Section M-19 is occupied almost entirely by commercial and industrial buildings with a few scattered residential units within the area. Many of the buildings appear to be over 100 years old and nearly all of them are over 50 years old. Generally, these buildings are run-down, obsolescent and not designed for efficient use in modern business and industrial operations. With but a few exceptions the buildings occupy almost 100% of the lots.

With respect to suitability of the Section proposed to be added to the Master Plan for residential development, it is noted that:

(1) Information obtained from real estate sources indicates that there is a demand for residential accomodations in this vicinity, to serve the downtown financial district;

(2) If there is a demand for additional areas for redevelopment with new office, industrial and warehouse structures, the area bounded generally by Brooklyn Bridge, South Street, Coenties Slip and Pearl Street,

immediately north of the section under consideration and occupied predominantly by old relatively small commercial structures, would be suitable for such redevelopment. Utilization of the small area presently under consideration for residential use would not unduly reduce the amount of land in downtown Manhattan suitable for commercial redevelopment;

(3) It is understood that the housing project contemplated within the Section under consideration will contain a high percentage of smaller apartments, to be occupied predominantly by two-person families and single persons. For this special type of residential development, the availability of schools and other community facilities needed by larger families, is not essential;

(4) The area under consideration is conveniently located with respect to places of employment in the financial, insurance, waterfront and other downtown business districts and within easy access of rapid transit and arterial vehicular routes, and is consequently especially appropriate for the contemplated housing development.

(5) The proximity of Battery Park and East River will provide open views, air and sunlight necessary for good residential development.

The matter was considered further and the Commission determined that the area under consideration constituted an appropriate addition to the Master Plan.

The City Planning Commission, pursuant to Section 197 of the City Charter, hereby adopts a modification of the Master Plan of Sections Containing Areas Suitable for development and Redevelopment by adding Section M-19, containing substandard and insanitary areas suitable for clearance, replanning, reconstruction and rehabilitation for predominantly resi-

dential use, bounded by Coenties Slip, South Street, Whitehall Street, Water Street, Broad Street and Pearl Street, Borough of Manhattan.

JAMES FELT, Chairman, FRANCIS J. BLOUSTEIN, Vice-Chairman, GOODHUE LIVINGSTON, JR., ROBERT G. McCULLOUGH, LAWRENCE M. ORTON, CHARLES J. STURLA, Commissioners; STUART CONSTABLE, Acting Commissioner.

APPENDIX C

A PLANNING STUDY OF LOWER MANHATTAN

Major Structures in Area South of Chambers Street

ilding	Location	Height	No. of Floors	Rental Area	Date Built
aunces Tavern	S. E. Corner of Broad & Pearl		4		1719
b-Treasury	28 Wall		3		1842
d Tribune	Park & Spruce	290'	24		1873-95
ntral R.R.	143 Liberty		12	130,000	1890
	39 Cortlandt		12	62,020	1891
	62 William		11	27,972	1891
	56 Beaver		8	33,353	1892
ffee & Sugar Exc.	66 Beaver		9	40,713	1894
	56 Pine		16	64,500	1894
me Insurance	256 Broadway	287'	16	56,456	1894
undation	120 Liberty		12	39,205	1895
Y. Clearing House	77 Cedar		5	23,038	1896
wling Green	11 Broadway	350'	24	302,000	1897
change Court	52 Broadway		12	135,000	1897
	13 William		11	112,572	1897
	32 Broadway		16	102,259	1898
esebrough	17 State		10	60,054	1898
rds Court	27 William	265'	20	175,786	1898
pire	71 Broadway	320'	25	196,432	1898
rk Row	15 Park Row	387'	32	210,000	1898
oad-Exchange	25 Broad	279'	21	375,831	1899
	82 Wall		12	42,000	1900
tery Park	24 State		12	97,469	1900
tinental Casualty	76 William		12	118,735	1900
ineering	114 Liberty		11	49,760	1901
enck	90 Wall		9	58,523	1901
antic	49 Wall	236'	21	150,000	1901
tom House	Bowling Green		7	381,000	1902
ay-Maiden Lane	170 Broadway	234'	18	112,342	1902

ilding	Location	Height	No. of Floors	Rental Area	Date Built
ritime	8 Bridge		11	79,203	1902
hn Loeb	52 William		21	84,000	1902
yal Bank	70 William		16	62,250	1902
ient	79 Wall		12	36,364	1902
coa Exchange	82 Beaver		15	80,276	1903
itehall	17 Battery Pl.	416'	32	548,100	1903-10
	42 Broadway	243'	21	302,445	1903
ll Street Exchange	43 Exchange Pl.	337'	26	129,240	1903
rn Exchange	21 William	262'	20	112,560	1903
	92 Liberty		21	73,065	1904
asae	78 Wall		12	32,600	1904
inity	111 Broadway		21	279,703	1905
	111-5 Trinity Pl.	308'	23	552,000	1905
	60 Wall	346'	27	155,964	1905
hman	3 S. William		11	56,000	1906
porters & Traders	24 Stone		18	64,800	1906
ec. Bond & Share	2 Rector	350'	26	271,000	1906
nk of Nova Scotia	37 Wall	317'	25	133,614	1907
ady	90 West	324'	24	249,300	1907
S. Realty	115 Broadway		21	254,068	1907
sen	120 Greenwich		12	62,020	1907
cess	60 Broadway		25	132,729	1908
	66 Wall		11	45,400	1908
wyers Trust	160 Broadway		16	69,300	1908
dson Terminal	30-50 Church	275'	26	1,100,000	1908
nger	149 Broadway	612'	47	250,000	1908
renson	165 Broadway	480'	34	540,000	1908
	26 Beaver		18	37,430	1909
nclair Oil	55 Liberty	400'	33	113,623	1910
erican Fore	80 Maiden Lane	230'	28	354,000	1912
kers Trust	16 Wall	540'	41	678,349	1912-32
icipal		584'	42	600,000	1913
lworth	233 Broadway	792'	60	550,000	1913
A .& T. Section I	195 Broadway	365'	32	645,900	1913
Section II	"				(1916)
Section III	"				(1923)

ilding	Location	Height	No. of Floors	Rental Area	Date Built
	50 Broad		20	158,000	1913
cade	23 Beaver		12	65,850	1913
ams Express	61 Broadway	424'	33	468,075	1914
uitable	120 Broadway	542'	44	1,236,928	1915
rgan House	23 Wall	90'	7		1915
erican Express	65 Broadway	297'	23	269,686	1917
	110 William	262'	22	188,000	1920
. Bur. of Shipping	45 Broad		9	65,810	1920
ll Steamship	115 Broad		12	44,300	1920
	40 Beaver		12	107,025	1920
	15 Moore		16	100,616	1920
Fasch	33 Rector		15	32,221	1921
Mnson	67 Wall	390'	26	236,752	1921
Cnard	25 Broadway	350'	25	584,252	1921
Aerican Surety	100 Broadway	338'	26	239,236	1921
Wshington	1 Broadway	178'	15	134,854	1921
Sock Exchange	11 Wall	340'	26	153,571	1922 Pt.
	89 Broad		8	43,000	1922
	60 Broad	316'	23	165,000	1923
Wstinghouse	150 Broadway	271'	25	182,262	1924
Sandard Oil	26 Broadway	505'	31	511,600	1925
	50 Broadway	418'	37	235,259	1926
Rebling	117 Liberty		17	83,341	1926
Tlephone	140 West	498'	34	851,390	1926
Tavelers Ins.	80 John	306'	27	220,000	1926
Bnk of America	44 Wall	329'	29	227,605	1926
Nw York Post	75 West	229'	20	184,020	1926
Wll & Hanover	63 Wall	440'	37	319,724	1927
Tinity Court	74 Trinity Pl.	312'	25	110,500	1927
Samen's Bank	72 Wall		15	225,700	1927-55
Ryal Insurance	150 Williams	280'	20	430,000	1927
Pk-Murray	11 Park Pl.	240'	20	170,000	1927

ilding	Location	Height	No. of Floors	Rental Area	Date Built
	60 Broad	170'	23	72,000	1927
ederal Reserve	33 Liberty		14	637,649	1928
tional City Co.	52 Wall	430'	35	207,213	1928
nk of N. Y.	48 Wall	513'	32	211,664	1928
quitable	15 Broad	540'	43	630,566	1928
.F. French	39 Broadway	456'	38	319,141	1928
ase National	20 Pine	496'	38	384,595	1928
ansportation	225 Broadway	540'	45	350,000	1928
blic Nat'l Bank	39 Broad		9	82,384	1926
wntown A. C.	18 West	534'	40		1930
nk of Manh. Trust	40 Wall	927'	70	816,065	1930
	120 Wall	430'	36	490,024	1930
T.& T.	67 Broad	456'	38	445,700	1930
er. Stock Exc.	86 Trinity	218'	15		1930
erican Int'l	1 Cedar	300'	26	175,000	1930
stern Union	60 Hudson	400'	25	1,000,000	1930
ate	270 Broadway	397'	30	320,000	1930
ty Bank Farmers	20 Exchange Pl.	760'	59	506,469	1931
	19 Rector		35	310,855	1931
	76 Beaver		27	65,362	1931
ynia	36 Pearl		7	24,282	1931
ving Trust	1 Wall	654	52	484,671	1931
	99 Wall	300'	29	77,625	1931
ritime Ex.	80 Broad	385'	38	287,354	1931
one & Webster	90 Broad	276'	24	243,148	1931
	7 Hanover St.	292'	28	78,000	1931
	21 West	442'	31	251,481	1931
	29 Broadway	375'	32	214,949	1931
ties Service		950'	67	680,000	1931
ldman Sachs	30 Pine	225'	22	116,107	1931
	90 John	326'	30	250,000	1931
	116 John	430	38	300,000	1931
w Amsterdam	60 John	378	31	320,000	1931
ntinental Bank	30 Broad	564'	50	296,070	1932
ll Tower	70 Pine		67	686,854	1932
rst Nat'l City	2 Wall		21	140,770	1933
amen's Bank	30 Wall		12	101,200	1955
ekman-Downtown Hosp.	170 William		8		1955

uilding	Location	Height	No. of Floors	Rental Area	Date Built
	Date of Construction Not Known				
orld Telegram	131 Barclay		10		
ational City	55 Wall	114'	11	181,000	
ostal Bldg.	20 Broad				
anover Bank	70 Broadway	361'	25		
uaranty Trust	31 Nassau				
yler	17 John		18	97,000	
	111 John	334'	25	293,000	
ld Times	41 Park Row		16		
ssay Office	77 Front		6		
eamens Church Inst.	41 Front		15		

ources: James Felt & Company
Real Estate Board of New York
Manhattan Land Book - G.M. Bromley
New York - The Wonder City - W. Parker Chase
Downtown Manhattan Map - Cushman & Wakefield

A PLANNING STUDY OF LOWER MANHATTAN

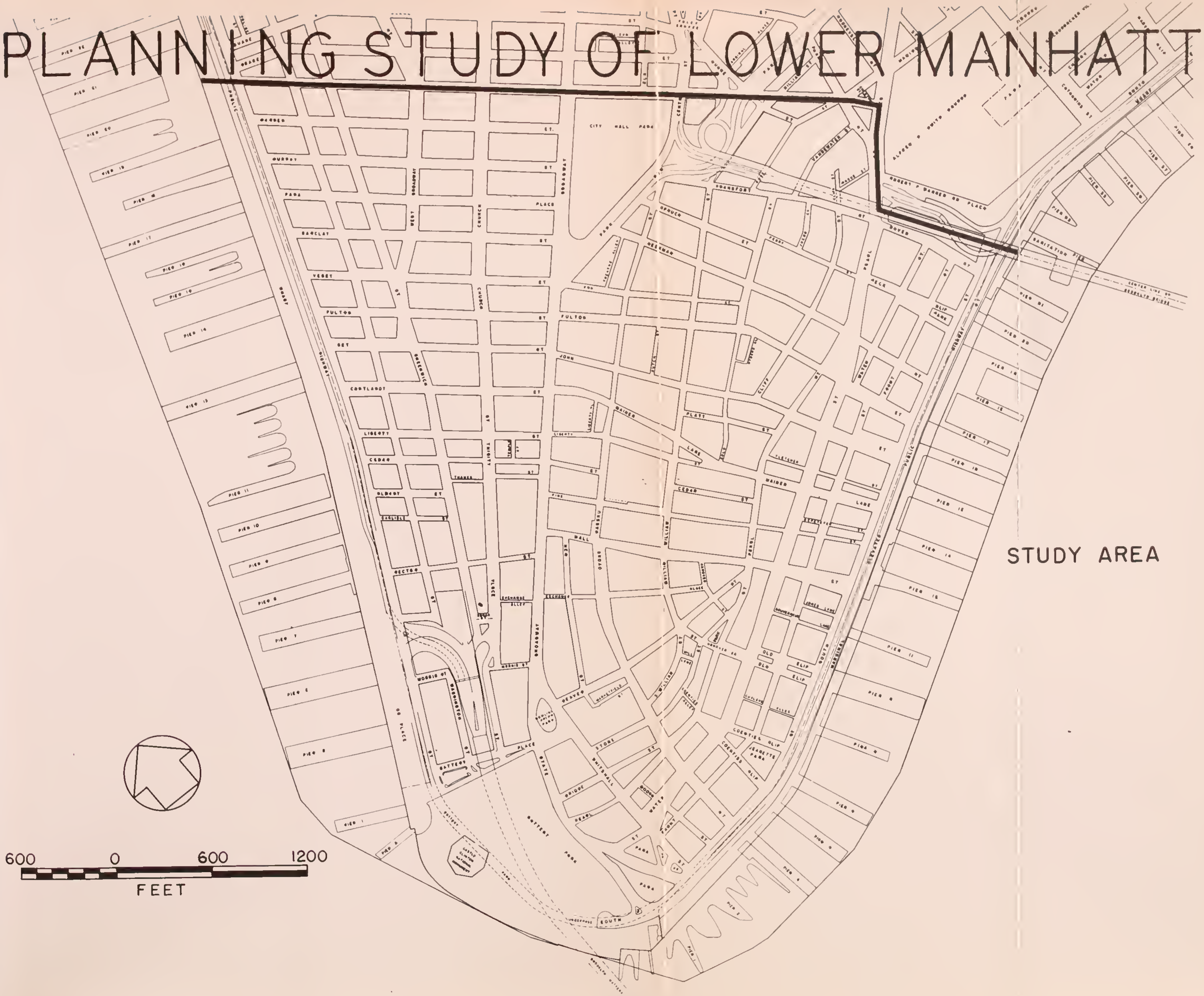
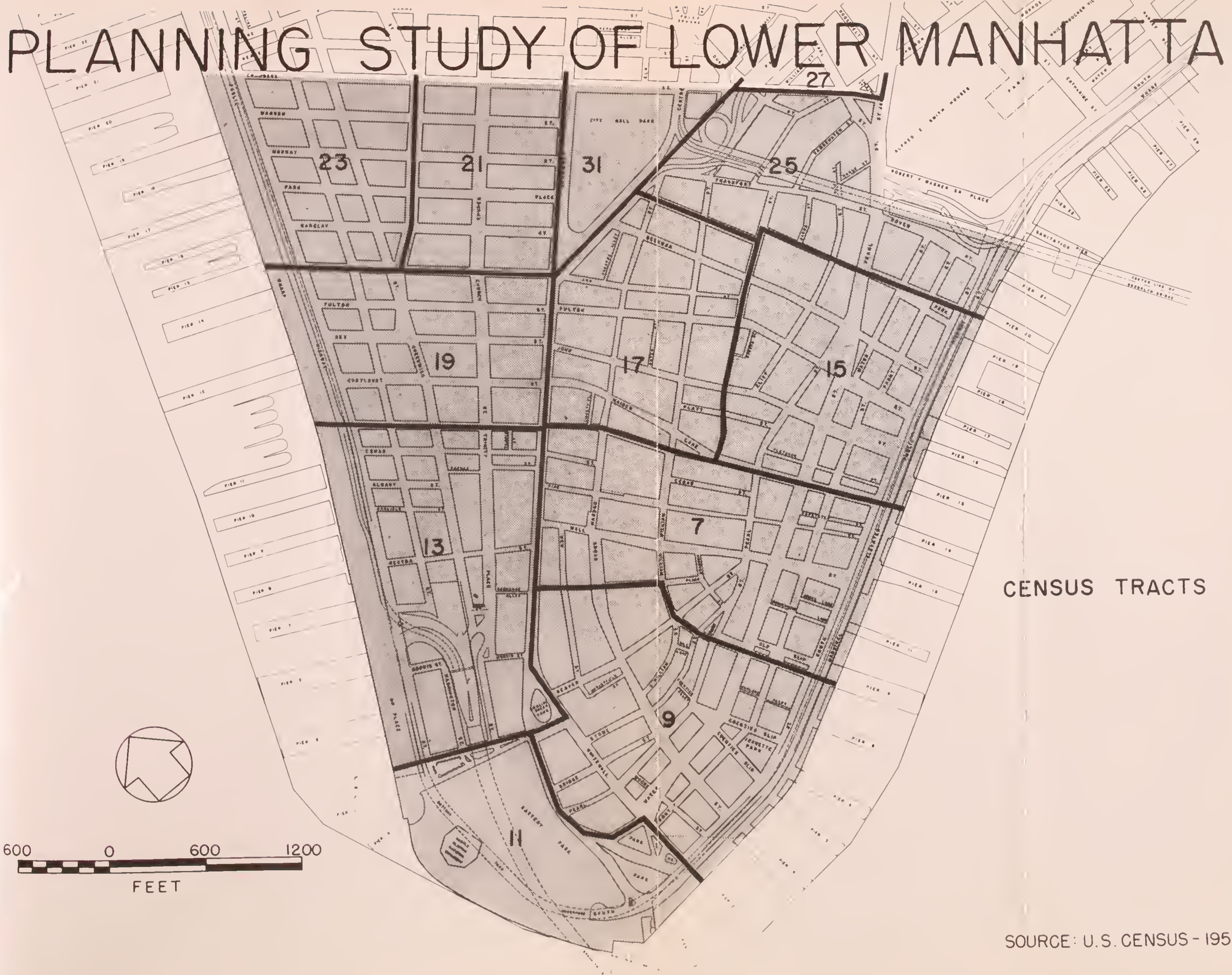


FIGURE 27.

A PLANNING STUDY OF LOWER MANHATTAN



CENSUS TRACTS

SOURCE: U.S. CENSUS - 1950

FIGURE 28

BIBLIOGRAPHY

American Society of Planning Officials; National Conference on Planning: 1940, (Chicago: American Society of Planning Officials, 1940). 194 pages.

---; Programs for Central Business District Improvement, Planning Advisory Service Information Report No. 80 (Chicago: The American Society of Planning Officials, 1955).

---; Wholesale Produce Markets, Planning Advisory Service Information Bulletin No. 70 (Chicago: The American Society of Planning Officials, January 1955). 26 pages.

Architectural Forum; Urban Traffic Forum, (New York: Architectural Forum, February 1953). Reprint. 8 pages.

Bakeless, John; The Eyes of Discovery, (New York: J.B. Lippencott, 1950).

Bank of Manhattan Trust Company; Manna-hatin, (New York: The Manhattan Company, 1929). 269 pages.

Bartholomew, Harland; Land Uses in American Cities, (Cambridge: Harvard University Press, 1955). 196 pages.

Board of Education; Utilization Tables

Breines, Simon and Dean, John P.; City People on the Move - A Policy of Guided Urban Growth, (new York: April 1948) Unpublished. 100 pages.

Bridenbaugh, Carl; Cities in Revolt: Urban Life in America, 1743-1776, (New York: Knopf, 1955). 434 pages.

Burton, Hal; The City Fights Back, (The Citadel Press, 1954).

Chapin, F. Stuart, Jr.; Urban Land Use Planning, (New York: Harper and Brothers, 1957). 397 pages.

Churchill, Henry S.; The City is the People, (New York: Reynal and Hitchcock, 1945). 186 pages.

Citizens Traffic Safety Board; The Cost of Traffic Congestion and Traffic Accidents in the City of New York, (New York: September 1953). unpaged.

City Club of New York; A Practical Program for Replanning the City of New York, (New York: The City Club, 1955). 16 pages.

City of New York; Zoning Ordinance

City Planning Commission; *A Plan for Manhattan Civic Center and Related Improvements*, (New York: City Planning Commission, 1948). 29 pages.

---; *Report of Hearing, December 19, 1956 on CP- 12751*, (New York: City Planning Commission).

Colean, Miles L.; *Renewing Our Cities*, (New York: The Twentieth Century Fund, 1953). 181 pages.

Collins, Frederick L.; *Money Town*, (New York: G.P. Putnam's Sons, 1946). 326 pages.

Department of City Planning; *Factory Location in New York City*, (New York: Department of City Planning, August 26, 1954).

---; *Population Changes in New York City*, (New York: Department of City Planning, November 22, 1954).

---; *Current Population Estimates*, (New York: Department of City Planning, March 1, 1955).

---; *Post-War Economic Trends in New York City*, (New York: Department of City Planning, May 2, 1955).

---; *Employment Distribution and Concentration in New York City*, (New York: Department of City Planning, December 1955).

---; *Employment Changes in New York City*, (New York: Department of City Planning, April 1956).

---; *The Large Firms in New York City*, (New York: Department of City Planning, December 1956.

Department of Commerce and Public Events; *New York - The City That Belongs to the World*, (New York: The Department of Commerce and Public Events, 1956).

Department of Marine and Aviation; *Rebuilding New York City's Waterfront*, (New York: 1956). 39 pages.

Dickinson, Robert E.; *City Region and Regionalism*, (London: Routledge and Keegan Paul, 1947). 327 pages.

Duffus, R.L.; *Mastering a Metropolis*, (New York: Harper and Brothers, 1930). 302 pages.

Dunshee, Kenneth; *As You Pass By*, (New York: Hastings House, 1952) 278 pages.

Felt, James and Company, and Voorhees Walker Foley and Smith; *Recommendation for a Redevelopment Study of Lower Manhattan South of Fulton Street*, (New York: 1950). 14 pages.

Foley, Donald L.; Census Tracts and Urban Research, (Rochester: University of Rochester). Reprint. 12 pages.

Geddes, Patrick; Cities in Evolution, (1949 revised edition, London: Williams and Moregate, 1915).

Gelder, Rodman; The Battery, (Boston: Houghton Mifflin, 1936). 304 pages.

Grebler, Leo; Experience in Urban Real Estate Investment, (New York: Columbia University Press, 1955). 277 pages.

Greer, Guy; Your City Tomorrow, (New York: Macmillan, 1947). 210 pages.

Haig, Robert M.; Major Economic Factors in Metropolitan Growth and Arrangement, (New York: Regional Plan Association, 1927).

Hallenbeck, Wilbur C.; American Urban Communities, (New York: Harper, 1951). 617 pages.

Harrison, Ballard and Allen; Plan for Rezoning the City of New York, (New York: City Planning Commission, 1950). 290 pages.

--- ; Business and Industrial Requirements, Technical Report No. 3, (New York: 1949). 95 pages.

Harwood, Edgar M.; Center City Goods Movement - An Aspect of Congestion, (Wahington, D.C.: Highway Research Board, 1958). Mimeo. 56 pages.

Howe, Frederic C.; The Modern City and Its Problems, (New York: Scribners, 1915).390 pages.

Hoyt, Homer; One Hundred Years of Land Values in Chicago, (Chicago: University of Chicago Press, 1933).

Lowe, Donald V.; "World's Greatest Port Looks Ahead" The Westsider, Vol. 20, No. 3, Winter 1955.

Kouwenhoven, John A.; The Columbia Historical Portrait of New York, (New York: Doubleday and Company, 1953). 550 pages.

McVoy, Arthur D.; "Pedestrian-Way Business Districts" The American City, Vol. LXXII (March, 1957). Pages 136 - 138, 171 - 178.

McCroskey, T.T., Blessing, Charles and McKeever, Ross J.; Surging Cities, (Boston: Greater Boston Development Committee, 1948). 287 pages.

Madigan-Hyland; Fulton Fish Market Study, (New York: Department of Markets, 1953). 79 pages.

Mitchell, Robert and Rapkin, Chester; Urban Traffic, (New York: Columbia University Press, 1955).

Metropolitan Rapid Transit Commission; *Metropolitan Rapid Transit Survey*, (New York: The Commission, 1957). 52 pages.

--- ; *Joint Report*, (New York: The Commission, March 1954). 102 pages.

Morgan, Cecil, ed.; *Ideas for a Better City*, Municipal Technical Advisory Service (Nashville: University of Tennessee, August 1956).

National Capital Park and Planning Commission; *Moving People and Goods*, Monograph No. 5 (Wahington, D.C. The Commission, 1950).

Newsweek Platform; *U. S. Cities - A Problem and a Challenge*, (New York: Newsweek Club and Educational Bureaus, September 1954). 22 pages.

New York Mirror, New York Times, and News Synidicate Company; *New York Market Analysis - Retail Trade*, (New York: 1952).

New York State Department of Labor; *Residence and Employment - 1950*, (New York: Division of Employment, Bureau of Research and Statistics).

New York State Temporary Commission of Agriculture; *The Washington Street Produce Market in New York City*, (Albany: Legislative Document No. __, 1955). 25 pages.

New York City Transit Authority; *Annual Report - 1954*, (New York: Transit Authority, 1955).

Neufeld, Ernst, ed.; *The Renascence of City Hall*, (New York: New York City Department of Public Works, 1956). 96 pages.

O'Connor, Vincent A.G.; "Terminus of the Seven Seas" *The Westsider* Vol. 22, No. 3, Winter 1957.

Owen, Wilfred; *The Metropolitan Transportation Problem*, (Washington, D.C.: The Brookings Institute, 1956). 301 pages.

--- ; "Transportation" *The Annals of the American Academy* Vol. 314, November 1957. Pages 30 - 38.

Park, Robert; Burgess, Ernest W.; and McKenzie, Roderick D.; *The City*, (Chicago: University of Chicago Press, 1925).

Pomeroy, Hugh and Schulman, S. J.; *Program Study for the New York State Chamber of Commerce Committee on Lower Manhattan Redevelopment*, (New York: The Committee, 1957). 65 pages.

Port of New York Authority; *Studies of Exceptionally Congested Areas in the City of New York*, (New York: The Port of New York Authority, 1945). 36 pages.

Works Progress Administration; A Maritime History of New York, (New York: Doubleday Doran, 1941). 341 pages.

"Zoning, master plans, surveys - these are instruments, not ends. The end is a livable city, suited to modern technologies of living. Until the planners know by what methods the ends are to be achieved, what the purpose of the city is, what those who live in it (not just those who 'own' it) want it to be, planning will continue to be merely the means of livelihood of planners. A city plan is the expression of the collective purpose of the people who live in it, or it is nothing. For in the last analysis, planning is not just yielding to the momentary pressure of fugitive groups, nor is it even the making of beautiful maps encompassing future hopes. It is something far more subtle; something inherent and ineluctable - the unspun web in the body of the spider."

Henry S. Churchill
in The City is the People

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